OHM Remediation Services Corp.
A Subsidiary of the IT Group

The IT Group ▪ 2790 Mosside Blvd ▪ Monroeville, PA 15146-2792 (800)444-9586

Former NTC Bainbridge, Port Deposit, MD	***Site Removal Actions***	***Date: 23-Nov-99***
Contract N62470-93-D-3032 D.O. # 137	***Project No. 919568***	***Title: memo 38***

TO: Frank Zepka [Navy], Mary Cooke [U.S. EPA Region III], Bill Schmidt [MDE], Kim LeMaster [MDE]
FROM: Larry Stearns
COPIES: Project File
SUBJECT: Transmittal of Project Close-Out Reports:
Volume 5: Building 693 - Water Treatment Plant – Lower Mechanical Room

Enclosed are the following copies of the above referenced document:

- U.S. EPA – Region III: 3 copies
- MDE: 2 copies
- Navy: 5 copies

Please forward any comments to Mr. Frank Zepka at the Navy.

OHM Remediation Services Corp.
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CONTRACTOR CLOSE-OUT REPORT
SITE CLEAN-UP AND REMOVAL ACTIONS
FORMER NAVAL TRAINING CENTER - BAINBRIDGE
PORT DEPOSIT, MARYLAND

VOLUME 5
BUILDING 693: WATER TREATMENT PLANT – LOWER MECHANICAL ROOM

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-93-D-3032: D.O. 137
Engineering Field Activity - Chesapeake
Naval Facilities Engineering Command
901 M Street S.E. (Building 212)
Washington, D.C. 20374-5018

Prepared by:

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November 22, 1999
OHM Project 919568

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LIST OF ACRONYMS

Acronym	Title
Arochlor	a chemical form of PCB's
EPA	U.S. Environmental Protection Agency – Region III
MDE	Maryland Department of the Environment
mg/kg	milligram per kilogram [parts per million]
NTCB	Former Naval Training Center Bainbridge
OHM	OHM Remediation Services Corporation, a subsidiary of The IT Group
PCB	polychlorinated biphenols
POL	petroleum, oil, and lubricants
TPH	Total Petroleum Hydrocarbon
TSCA	Toxic Substances Control Act
TSD	treatment, storage, and disposal facility

1.0 INTRODUCTION

OHM Remediation Services Corp. [OHM] was contracted by the Navy to perform environmental remediation at the former Naval Training Center Bainbridge [NTCB] near Port Deposit, Maryland. This report documents a portion of the work performed on this project by OHM under federal contract N62470-93-D-3032, Delivery Order No. 137 issued 5 February 1997. Specifically, this report addresses the remediation at Building 693: Water Treatment Plant – Lower Mechanical Room, and related remediation at Building 691. Refer to drawing RD-01 for the building locations.

1.1 PROJECT BACKGROUND

Design and construction of NTCB began in 1942 initially building from the property of the former Tome Institute School. NTCB served as a boot camp for Navy recruits during World War II and the Korean War and was permanently closed in 1976. The facility encompasses approximately 1,250 acres and consists of roads, drill fields, and about 60 remaining buildings. Most buildings and structures within NTCB were demolished during the last 10 years. Since deactivation, NTCB has become extensively overgrown and has been little used in the past two decades.

The U.S. Department of the Navy currently owns NTCB, but transfer of ownership to the State of Maryland is in progress pending resolution of various environmental and other issues. State and local agencies are planning to develop NTCB, possibly for commercial and residential use. The remediation discussed in this report is part of a larger environmental remediation effort by the Navy at NTCB.

1.2 GENERAL SCOPE OF WORK

The general scope of work for the Building 693 – Water Treatment Plant: Lower Mechanical Room involved investigating the extent of PCB impacted concrete, removing the PCB from the concrete or removing the impacted concrete, performing confirmation testing, and site restoration.

During the execution of this work, OHM used the following subcontractors for waste disposal or analytical services:

- Non-hazardous solid waste disposal (TPH) – Soil Safe Inc., 4600 East Fayette Street, Baltimore, Maryland 21224; (800) 562-4365.
- Non-hazardous solid waste disposal (PCB) – USA Waste Modern Landfill, RD 9, Prospect Road, York, Pennsylvania 17402; (717) 246-2686.
- Non-hazardous solid waste disposal – BFI Conestoga Landfill – New Morgan Landfill Co., Inc., P.O. Box 128, Mineview Drive Extension, Morgantown, Pennsylvania 19543; (610) 286-6844.
- Hazardous solid waste disposal (PCB) – Laidlaw PCB Services, 4105 Whittiker Ave., Philadelphia, PA 19124; (215) 425-5144.
- Hazardous liquid waste disposal (PCB) – Cyclechem, Inc., 217 South First St., Elizabeth, NJ 07206; (908) 355-5800.

- Non-hazardous bulk liquid disposal – International Petroleum Corp., 505 Market Street, Wilmington, Delaware 19801; (302) 421-9306.

- Hazardous liquid waste (Mercury) – Environmental Enterprise, Inc., 4650 Spring Grove Ave., Cincinnati, Ohio 45232; (800) 722-2818.

- Laboratory analytical work – OHM Remediation Services Corp. – Analytical Division, 16406 U.S. Route 224 East, Findlay, Ohio 45839-0551; (419) 423-3526.

- Laboratory analytical work – Mitkem Corporation, 175 Metro Center Boulevard, Warwick, Rhode Island 02886; (401) 732-3400.

- Laboratory analytical work – Q BioChem, L.L.C., 1401 Municipal Road, Roanoke, VA 24012-1309; (540) 265-7211.

1.3 PROJECT CLEANUP LEVELS

The project cleanup levels listed in Table 1 were established by the Navy with the concurrence of the EPA and MDE. Remediation continued until all of the confirmation analyses gave results that did not exceed the cleanup level(s) for the particular chemical(s) of concern at a specific location. Although laboratory analyses other than those listed in Table 1 may have been performed and may be reported in this document, the Table 1 values were the only cleanup levels specifically established for NTCB. For the Building 693: Water Treatment Plant – Lower Mechanical Room, the chemicals of concern for cleanup levels were:

- Total Petroleum Hydrocarbon
- Total PCB – Concrete
- Total PCB – Nonporous surface

Table 1: Project Cleanup Levels Applied at Various NTCB Locations

Chemical of Concern	Cleanup Level	Units	Units	Intended Matrix
Total Petroleum Hydrocarbons	100	mg/kg	ppm	Soil
DDT	4.3	mg/kg	ppm	Soil
DDE	16.3	mg/kg	ppm	Soil
DDD	23.1	mg/kg	ppm	Soil
Alpha Chlordane	4.1	mg/kg	ppm	Soil
Gamma Chlordane	4.1	mg/kg	ppm	Soil
Heptachlor Epoxide	0.4	mg/kg	ppm	Soil
Antimony	27	mg/kg	ppm	Soil
Lead	400	mg/kg	ppm	Soil
Benzo (a) pyrene	2.0	mg/kg	ppm	Soil
Total PCB	10	mg/kg	ppm	Soil
Total PCB	10	mg/kg	ppm	Concrete
Total PCB	10	μg per 100 cm^2	ppm	Non-porous Surfaces
Total PCB	50	mg/kg	ppm	Encapsulated Concrete

2.0 SUMMARY OF WORK PERFORMED

The following sections summarize the remediation work performed for the site cleanup action at Building 693: Water Treatment Plant – Lower Mechanical Room, and associated work at Building 691. The locations of buildings are shown on drawing RD-01.

2.1 LOCATION INVESTIGATION AND INITIAL REMOVALS

In April 1997, five capacitors were discovered in the lower mechanical room of Building 693 – Water Treatment Plant. Four of these were observed to have leaked a viscous fluid onto the concrete floor. Samples of the leaked material contained 580,000 to 880,000 ppm Total PCB, and a sediment sample collected from the floor below the non-leaking fifth capacitor had 210 ppm Total PCB. It was known that this room would periodically flood with roughly 3-feet of groundwater which would drain away in an unpredictable time frame. This raised concerns about PCB migration through floor drains or sediment transport and deposition inside the room below the visible high water mark on the walls. An investigation and remediation approach was developed between the Navy, EPA, MDE, and OHM during the following months. Drilled samples would be collected from the concrete walls and floors, and the impacted areas would be remediated by pneumatically chiseling off the concrete.

In December 1997 and January 1998, extensive sampling and analyses were performed in the lower mechanical room. Samples were collected and tested from the concrete floors and walls, from the sediment on the floor, from the 8 concrete machine support pads, from various non-porous metal surfaces including machine legs and piping, and from structural concrete columns. Laboratory analyses for PCB's were performed in accordance with EPA SW-846 Method 8082. Field screening for PCB's was performed in accordance with EPA SW-846 Method 4020 "Screening for Polychlorinated Biphenyls by Immunoassay." The field kits used were Strategic Diagnostics, Inc. [Ensys] "PCB RISC Soil Test System" calibrated to 2.5, 10, and 50 ppm Total PCB.

These results indicated that certain, well-defined areas of the concrete walls and floors were impacted with PCB, possibly up to the ½-inch thick concrete sampling depth. It was noted that all of the wall areas that were affected by PCB were either at or below the visible high water mark that stained the walls approximately 3- ½ feet above the lower floor [approximately Elevation 379.6 feet]. The results also indicated that the concrete floors and walls were not impacted by PCB everywhere. The highest PCB impacted concrete was located directly below and in close proximity to the four leaking capacitors. The floor drains were not impacted. However, some of the sediments were impacted with PCB.

During the January 1998 investigation, several wall mounted liquid mercury switches were found along with some free liquid mercury on the floor of the lower mechanical room. The mercury switches were immediately removed and packaged for disposal. Approximately 4 fluid ounces of liquid mercury was recovered from the floor and packaged for disposal.

On 19-Jan-98, a 500-gallon UST was found outside the lower mechanical room [southeast] approximately 7-feet below grade while investigating the drainage piping system. The storage tank contained a small, but unknown, quantity of petroleum product. The storage tank was later removed and the area remediated. Refer to Volume 2: Aboveground and Underground Storage Tank Removal for additional information.

Based on the results of the investigation from December 1997 to January 1998, the approach to remediating PCB impacted concrete was revised during discussions between the Navy, EPA, MDE, and OHM. A special type of cleaning detergent would be used to remove the PCBs from the porous surfaces, and pressurized steam would be used for cleaning non-porous surfaces and for rinsing concrete surfaces. However, heavy rains in late January 1998 led to the lower mechanical room becoming flooded with groundwater before the remediation could begin. Although all parties agreed to wait until the groundwater subsided from the room before starting remediation, this had not occurred by June 1998. In order to expedite the remediation, it was then decided to actively dewater the room by pumping and to provide water treatment prior to discharge on-site.

2.2 REMOVAL ACTION

The following summarizes the cleanup and removal actions performed during the site remediation. During this work, close communication was maintained with the Navy, EPA, and MDE representatives regarding the remediation progress and decisions about confirmation analytics.

Remediation work for PCB's inside the lower mechanical room began on 9-Jun-98 and was completed on 7-Aug-98. Initially, vegetation was cut back to improve access to the work area, and all loose debris and equipment were removed from the room for off-site disposal. The liquid mercury was collected from the floor for disposal off-site as a hazardous waste. The floor drains were blocked with hydraulic cement plugs.

A general cleaning was performed next. The entire room below the visible high water mark [approximately Elevation 379.6 feet] was cleaned with high pressure water [300 psi] to remove scale, rust, loose paint, algae, and any other loose materials from the walls, floors, and machinery. Next, the entire room below the high water mark was sprayed with a full strength surfactant including the walls, floors, and all exposed machinery and piping. This surfactant was a mineral acid and organic acid surfactant solution specifically designed for PCB and organics removal from concrete and masonry surfaces ["Less Than Ten," Chemical Solutions Int'l. Corp., P.O. Box 891185, Houston, Texas 77289-1185] . After the manufacturer's recommended 1-hour waiting period, the entire room below the high water mark was rinsed off with high pressure steam [3,000 psi] including the walls, floors, and all exposed machinery and piping. Movable plastic sheets were hung from elevated piping lines to isolate the spray into particular work areas. The wash and rinse waters were collected and drummed. Later the drummed solids were consolidated by decanting off separated liquids which were treated by the on-site dewatering treatment system.

After this general cleaning and the initial round of confirmation testing, the remaining hot-spots were cleaned on the concrete walls and floors using the surfactant solution in accordance with manufacturer's instructions. The surfactant was applied full strength to the concrete surface with hard bristle brushes in the hot-spot areas being remediated. The treated surface was allowed to sit for approximately 1-hour. High pressure steam was then used to rinse off the area being cleaned. The wash and rinse waters were collected and drummed for off-site disposal.

The hot-spots on the concrete walls and floor were repeatedly cleaned with surfactant, rinsed with pressurized steam, sampled by drilling out concrete dust, and tested for PCB concentration with the field kits. Additional cleanings were performed as necessary on hot spots until the field testing and laboratory analytical results both indicated that the Table 1 cleanup criteria had been achieved.

Two small floor areas [each about 3-feet by 3-feet] consistently failed to meet the cleanup criteria using the surfactant cleaning approach. Each was chiseled out approximately 3-inches deep with a

jackhammer. The concrete chips were collected and drummed for off-site disposal. Concrete confirmation samples from these two areas showed that the Table 1 cleanup criteria had been achieved.

During this work, over 300,000 gallons of water were pumped from the lower mechanical room in order to allow the PCB cleaning work to occur. These waters were treated and discharged into a flat, bermed, infiltration area on the northwest side of Building 691. MDE set the water discharge limit at 0.5 ppb total PCB's based on a daily grab sample of the treated discharge for laboratory analysis. The treatment train initially met this criteria. However, a concentration breakthrough occurred during treatment . Some PCB entered the Building 691 infiltration soils before the analytical results were available and the breakthrough problem was realized. To remediate the soils in this area, approximately 15 cyd of impacted soil was removed 1-foot deep from about 400 square feet of the infiltration area at Building 691and disposed of off-site as non-hazardous waste. Field kit and laboratory analytical results on post excavation samples indicated these areas were below the Table 1 cleanup criteria for soils.

2.3 SITE RESTORATION

A grass lined drainage swale was installed to allow water to flow from the remediated floor of the lower mechanical room towards the reservoir. All disturbed earthen areas were seeded with grass and mulched with straw. A concrete patch was placed on the two chiseled areas of the floor.

Table 2: Summary of Waste Disposal at Building 693

Waste Description	Hazardous Waste	Waste Quantity	Shipping Units	Disposal Facility	Shipment Date
TPH impacted bulk water; from UST excavation	No	Approx. 4,000	Gallons	Int'l Petroleum Wilmington, DE	17-Feb-98
TPH impacted soils; from UST excavation	No	120.87	Tons	Soil Safe, Inc. Baltimore, MD	30-Jul-98
PCB impacted bulk debris; from floor and exterior pit	No	Approx. 10	Tons	USA Waste Modern Landfill, York, PA	10-Sep-98
PCB impacted solids; cleaning solids and concrete	Yes	12	Drums	Cyclechem, Inc. Elizabeth, NJ	5-Oct-98
PCB impacted bulk liquids; treated - building dewatering	No	Approx. 3,400	Gallons	Int'l Petroleum Corp., Wilmington, DE	Oct-98
PCB impacted solids; water treatment units	Yes	10	Drums	Laidlaw PCB Services, Philadelphia, PA	Jan-99
TPH and PCB impacted soils	No	187.09	Tons	BFI Conestoga Landfill, Morgantown, PA	10-Dec-98
Mercury (metallic liquid)	Yes	Approx. 4	Fluid Ounces	Environmental Enterprise Inc. Cincinnati, Ohio	3-Sep-98

3.0 CLEANUP CONFIRMATION

The following discussion summarizes the confirmation laboratory analyses that represent the Building 693 – Water Treatment Plant: Lower Mechanical Room and the Building 691 treated water infiltration area at the completion of the remediation. The sample locations are shown on drawing RD-03.

3.1 CONFIRMATION APPROACH

This discussion is a synopsis of the approach to confirmation sampling and analyses that was presented in the OHM Work Plan Addendum No. 1 dated December 1, 1997. Portions of this work plan addendum are presented in Appendix D. The confirmation efforts at the Building 693 Water Treatment Plant: Lower Mechanical Room and the Building 691 water infiltration area were to demonstrate that the remediation had achieved the Table 1 cleanup levels for Total PCB in concrete, certain non-porous surfaces, and soil. The encapsulated concrete cleanup level in Table 1 was not utilized on this project.

3.1.1 Building 693: Lower Mechanical Room

Confirmation samples of concrete were performed with both field testing and laboratory analysis. Field testing was performed in accordance with EPA SW-846 Method 4020 "Screening for Polychlorinated Biphenyls by Immunoassay" using the Strategic Diagnostics, Inc. [Ensys] "PCB RISC Soil Test System" calibrated to 2.5, 10, and 50 ppm Total PCB. Laboratory analyses were performed in accordance with EPA SW-846 Method 8082. Half of the samples screened with the field kit and found to be below the cleanup level, were also sent for off-site laboratory confirmation analysis. In those areas being remediated, the walls and vertical surfaces were sampled once per 50 square feet, while the floors and horizontal surfaces were sampled once per 100 square feet.

Concrete dust samples were collected using an ½-inch diameter pneumatic impact drill. A sufficient number of holes were drilled approximately ½-inch deep to provide the quantity of concrete dust needed for either field testing or laboratory analyses. Sediment samples were collected using chemically-inert disposable sample scoops. Wipe samples were collected from non-porous surfaces [e.g., machine support legs, steel or concrete columns] using 10 passes horizontally and 10 passes vertically of a cotton gauze pad moistened with hexane solvent to wipe a 100 cm2 area defined by a stencil. All wipe samples were sent for laboratory analyses. Confirmation samples were biased towards previously identified hot spots.

3.1.2 Building 691: Water Infiltration Area

Soil samples were collected using chemically-inert disposable sample scoops. Samples were three point composites biased toward previously identified hot spots.

3.2 LABORATORY ANALYTICAL RESULTS

Laboratory analytical results are discussed below for the remediation work. Appendix C provides the data validation reports for these laboratory samples. Although the field screening results were used as an integral part of determining whether or not to proceed with remediation or with further sampling, these results are not presented.

3.2.1 Building 693: Lower Mechanical Room

Table 3 presents the confirmation analytical results for the concrete surfaces in the Lower Mechanical Room. The results indicate that the 10 ppm Total PCB cleanup levels were achieved for concrete as given in Table 1.

Table 3: Summary of Concrete Analytical Results in Lower Mechanical Room

Sample	Type	Location	Total PCB [ppm]
534	Concrete	North wall	2.4
533	Concrete	East wall	4.3
554	Concrete	East wall	1.6
549	Concrete	East wall	5.2
547	Concrete	East wall	2.4
511	Concrete	East wall	2.2
557	Concrete	Floor stair wall	0.44
539	Concrete	Exterior wall	2.3
522	Concrete	Exterior floor	3.4
529	Concrete	Lower floor	2.0
546	Concrete	Lower floor	3.6
548	Concrete	Lower floor	2.8
507	Concrete	Upper floor	1.6
508	Concrete	Upper floor	1.4
509	Concrete	Upper floor	1.3

Investigative wipe samples were collected on various metal surfaces and machinery parts below the high water elevation. These results are presented in Table 4 . The validated data represent the condition *before* the June 1998 initial cleaning of the entire room below the high water elevation [see Section 2.2]. These surfaces were not cleaned or sampled further after the initial cleaning since the Table 1 cleanup levels for PCB had been satisfied *prior* to this initial cleaning.

Table 4: Summary of Wipe Samples in Lower Mechanical Room Prior to Initial Cleaning

Sample	Type	Location	Total PCB [ug per 100 cm^2]
224	Wipe	Column	0.94
225	Wipe	Column	1.4
226	Wipe	Column	6.2
227	Wipe	Machine	2.3
228	Wipe	Machine	5.3
230	Wipe	Machine	8.4
231	Wipe	Metal Box on Wall	4.5
232	Wipe	Wall	0.83

3.2.2 Building 691: Water Infiltration Area

Table 5 presents the analytical results for the three composite [3-point] soil samples that were collected from 0 to 6-inches below grade in the water infiltration area at Building 691. These sample results indicate that the Table 1 soil cleanup levels were satisfied.

Table 5: Summary of Soil Analytical Results at the Building 691 Water Infiltration Area

Sample	Type	Total PCB [ppm]
820	Soil composite	<1.2
822	Soil composite	<1.2
824	Soil composite	<1.2

APPENDIX A
PHOTOGRAPHS

NTCB - Port Deposit, Maryland: Water Treatment Plant: Lower Mechanical Room
Cleanup Action - Delivery Order No. 137

Photo 1. Lower Mechanical Room 12/97

Photo 2. Lower Mechanical Room 12/97

NTCB - Port Deposit, Maryland: Water Treatment Plant: Lower Mechanical Room
Cleanup Action - Delivery Order No. 137

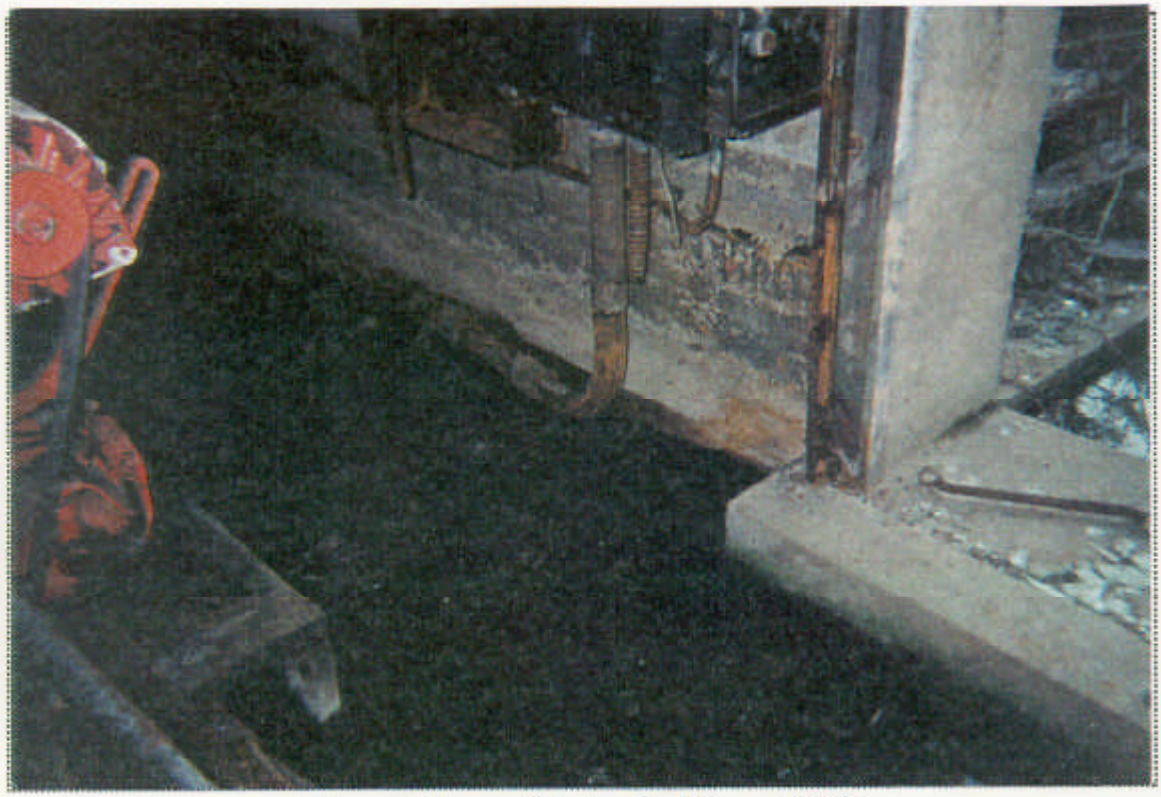


Photo 3. Lower Mechanical Room 12/97

Photo 4. Cleaning of Door to Lower Mechanical Room 12/97

Photo 5. Silt Fence Installation - Bldg. 693 3/27/98

Photo 6. Sampling Wall Outside Lower Mechanical Room 12/97

Photo 7. Floor Sample 210 Being Collected 12/97

Photo 8. Southeast corner of the Lower Mechanical Room 12/97

Photo 9. East Wall - Lower Mechanical Room 12/97

Photo 10. East Wall - Lower Mechanical Room 12/97

Photo 11. Mercury on Floor of Building 693

Photo 12. Stock Pile of TPH Impacted Soil fromUST Removal 4/98

Photo 13. Completion of Wall for Decon Water Containment 6/98

Photo 14. Building Decon of Bldg. 693 6/98

Photo 15. Watch Treatment System

Photo 16. Water FloodingWork Area of Bldg. 693 7/98

Photo 17. Soil Staging Area 8/98

Photo 18. Staged PCB Contaminated Soil & Treated Water Storage Pool
27-Aug-98

Photo 19. Discharge Area Along Bldg. 691: Excavated, Seeded, Mulched
27-Aug-98

Photo 20. Water Treatment System with Baker Holding Tank 9/98

Photo 21. Stone Berm and Berrier Added to Control Water Seepage 9/98

**Photo 22. Finished Lower Mechanical Room Area
Prior to Completion of the Spillway**

Photo 23. Lower Merchanical Room Emptied of Water 6/98

Photo 24. Jack Hammering Contaminated Areas 8/98

APPENDIX B
RECORD DRAWINGS

IMAGE	X-REF	OFFICE	DRAWING NUMBER
---	---	Pittsburgh, PA	19568-F29

SUSQUEHANNA RIVER

PORT DEPOSIT

1 PORT DEPOSIT

2 TOME INSTITUTE

3 CAMP ROGERS

4 CAMP SEMMES

5 SEWAGE PLANT

6 CAMP PERRY

7 CAMP BARNEY

8 HOSPITAL

9 GATE 14

10 RAIL YARDS

11 CAMP JAMES

12 MANOR HEIGHTS

13 GATE 27

RUBBLE LANDFILL

OLD LANDFILL

MD ROUTE 276

MD ROUTE 222

MD ROUTE 275

TO ROUTE MD 275

TO MD ROUTE 222

MAIN GATE

WATER TREATMENT PLANT BUILDING 691 & 693

CECIL COUNTY COMMUNITY COLLEGE TRUCK DRIVING SCHOOL

WATER TREATMENT PLANT

GATE 19 BLOCKED BY BARRIER

ROAD BLOCKED BY BARRIER

ROAD BLOCKED BY EARTH BERM

ROAD BLOCKED BY GUARD RAIL

BASE PERIMETER FENCE DOWN ON GROUND

DAWN'S CHASE HORSE FARM OWNED BY D.C. WHITAKER

BAINBRIDGE ELEMENTARY SCHOOL

LEGEND:

- EXISTING MONITORING WELL
- WETLANDS LOCATION
- APPROXIMATE BASE BOUNDARY
- STREAM
- TRANSMISSION LINE (DELMARVA)
- UNOCCUPIED EXISTING BUILDING
- FORMER BUILDING LOCATION
- OCCUPIED EXISTING BUILDING

SCALE
350 0 350 700 FEET

PLOT DATE: 10/7/99
FORMAT REVISION 3/25/99

REV	DATE	BY	CHK'D	APP'D	DESCRIPTION/ISSUE
REVISIONS					

OHM Remediation Services Corp.
PROJECT NO. 19568

DESIGNED BY	M.WARNICK	CHECKED BY	L.STEARNS	10/13/97
DRAWN BY	M.WARNICK	10/13/97	APPROVED BY	L.STEARNS	10/07/99

SEAL AREA

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
WASHINGTON, D.C.
NAVAL STATION
NAVAL TRAINING CENTER - BAINBRIDGE
PORT DEPOSIT, MARYLAND

ATLANTIC DIVISION

SITE CLEAN-UP AND REMOVAL ACTIONS

LOCATION OF REMEDIATION SITE

SCALE:	SIZE:
AS SHOWN	F

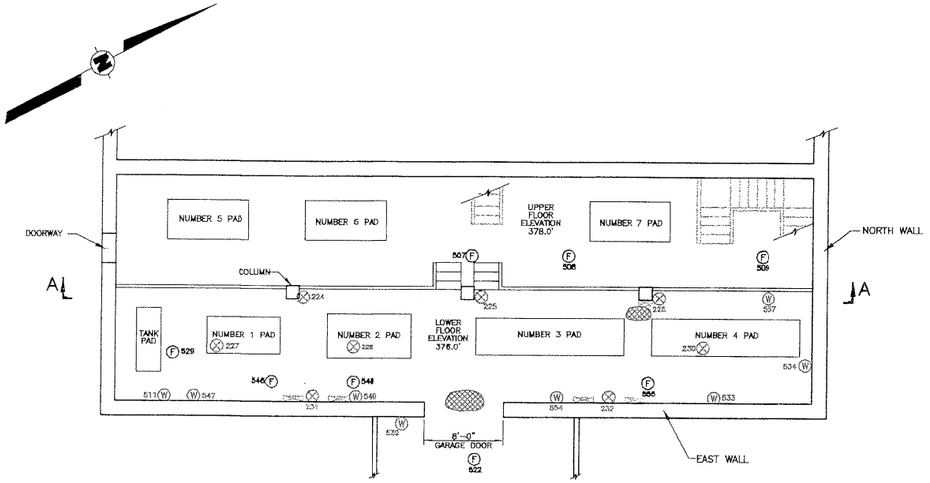
DELIVERY ORDER NO.
137

CONSTR. CONTRACT NO.
N62470-93-D-3032

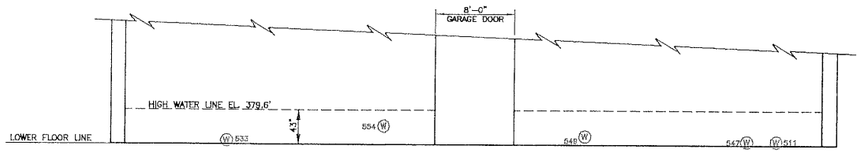
NAVFAC DRAWING NO.

SHEET I.D.
RD-1

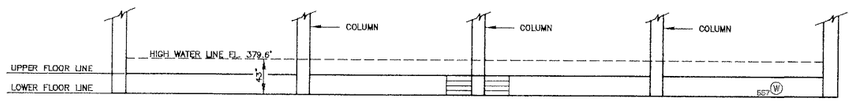
IMAGE ___ | X-REF ___ | OFFICE Pittsburgh, PA | DRAWING NUMBER 19568-F23



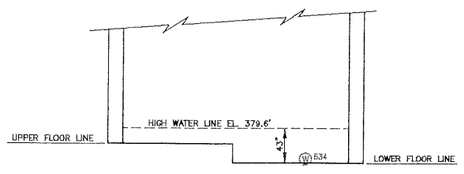
PLAN



EAST WALL



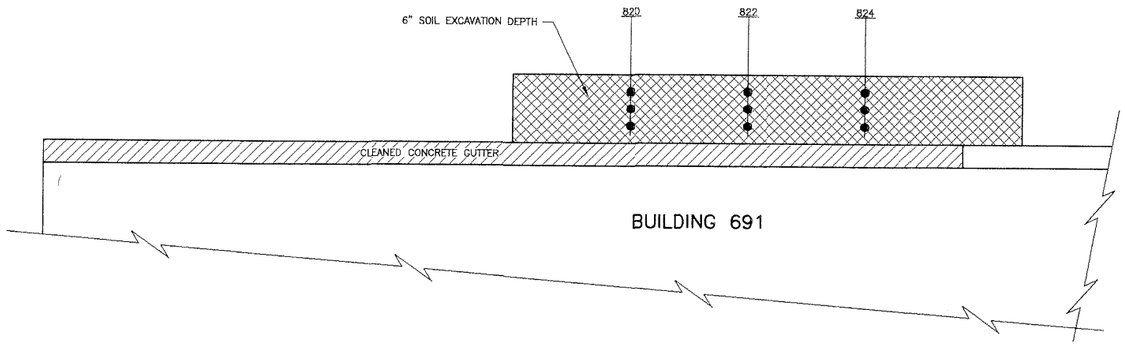
SECTION A – A



NORTH WALL

BUILDING 693 – LOWER MECHANICAL ROOM PCB SAMPLING LOCATIONS

SCALE
0 6 12 18 FEET



BUILDING 691 PCB SAMPLING LOCATIONS

SCALE
0 6 12 18 FEET

LEGEND:
- CHIPPED CONCRETE SURFACE
- FORMER CAPACITOR LOCATIONS
- (W) 265 — WALL SAMPLE (CONCRETE)
- (F) 215 — FLOOR SAMPLE (CONCRETE)
- 221 — WIPE SAMPLE (COLUMNS AND MACHINERY)
- COMPOSITE SOIL SAMPLE LOCATIONS

WL
N

PLOT DATE: 7/7/98
FORMAT REVISION 3/25/98

REVISIONS

REV	DATE	BY	CHK'D	APP'D	DESCRIPTION/ISSUE

OHM Remediation Services Corp.
PROJECT NO. 919568

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
JSW/JRF	R.WEIBLE	1/27/99	1/28/99
KRK	LJS	10/6/99	10/6/99

SEAL AREA

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
WASHINGTON, D.C.
NAVAL STATION EFA – CHESAPEAKE
NAVAL TRAINING CENTER – BAINBRIDGE
PORT DEPOSIT, MARYLAND
REMOVAL ACTIONS
BUILDING 693: WATER TREATMENT PLANT
"LEFT-IN-PLACE" SAMPLE LOCATIONS

SCALE: AS SHOWN	SIZE: F
DELIVERY ORDER NO. 137	
CONSTR. CONTRACT NO. N62470-93-D-3032	
NAVFAC DRAWING NO.	
SHEET I.D. RD-3	

APPENDIX C
DATA VALIDATION REPORT

DATE: October 13, 1999

SUBJECT: Data Validation for Building 693
Former Naval Training Center-Bainbridge
Port Deposit, Maryland

FROM: Michael J. Lacy, Ph.D.

Michael J. Lacy
Field Analytical Services Manager
IT Corporation – Trenton, New Jersey

TO: Mary Cooke – Project Contact
Hazardous Site Cleanup Division, 3HS13

OVERVIEW

Eight (8) wipe samples were analyzed for polychlorinated biphenyls by EPA SW-846, Method 8082. These samples were collected from metal support columns and machinery. No site-specific Quality Control samples were analyzed. OHM Analytical Division, located in Findlay, OH, performed the analyses.

SUMMARY

All samples were successfully analyzed.

MAJOR PROBLEMS

No major problems with the validity of the analytical data were found.

MINOR PROBLEMS

No minor problems with the validity of the analytical data were found.

NOTES

- No matrix spike/matrix spike duplicate were analyzed with these samples. However, a method blank spike and method blank spike duplicate were analyzed. All recoveries were within acceptable limits.
- Wipe samples 224 and 232 were reported as estimated (J) values by the laboratory.

REPORT CONTENT STATEMENT

These data were reviewed in accordance with USEPA Region III Modifications to National Functional Guidelines for Organic Data Review: Multi-Media, Multi-Concentration (OLMO1.0-OLMO1.9) for Pesticides/Polychlorinated Biphenyls. The text of this report only addresses items which affect the validity of the data contained therein.

ATTACHMENT A

Glossary of Data Qualifiers

Glossary of Data Qualifier Codes

Codes Relating to Identification
(Confidence Concerning Presence or Absence of Compounds)

U = Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

(No Code) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm the presence or absence in future sampling efforts.

Codes Related to Quantitation
(Can be used for both positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

Other Codes

Q = No analytical result.

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

ATTACHMENT B

Data Summary Forms

Site: FNTC - Bainbridge - Building 693 Confirmation Results

Lab: OHM Analytical Division

Reviewer: Michael J. Lacy, Ph.D.

Date: 06 October 1999

Report Number: 623434

Sample I.D.	224		225		226		227	
Matrix	Wipe		Wipe		Wipe		Wipe	
Units	ug/Wipe		ug/Wipe		ug/Wipe		ug/Wipe	
Date Sampled	12/7/97		12/7/97		12/7/97		12/7/97	
Time Sampled	0815		0820		0825		0830	
% Moisture	N/A		N/A		N/A		N/A	
pH	N/A		N/A		N/A		N/A	
Dilution Factor	1.0		1.0		1.0		1.0	
	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1221	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1232	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1242	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1248	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1254	0.94	J	1.4		6.2		2.3	
Aroclor 1260	<1.0	U	<1.0	U	<1.0	U	<1.0	U

Sample I.D.	228		230		231		232	
Matrix	Wipe		Wipe		Wipe		Wipe	
Units	ug/Wipe		ug/Wipe		ug/Wipe		ug/Wipe	
Date Sampled	12/7/97		12/7/97		12/7/97		12/7/97	
Time Sampled	0835		0845		0850		0855	
% Moisture	N/A		N/A		N/A		N/A	
pH	N/A		N/A		N/A		N/A	
Dilution Factor	1.0		1.0		1.0		1.0	
	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1221	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1232	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1242	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1248	<1.0	U	<1.0	U	<1.0	U	<1.0	U
Aroclor 1254	5.3		8.4		4.5		0.83	J
Aroclor 1260	<1.0	U	<1.0	U	<1.0	U	<1.0	U

VQ - Validation Qualifier

Data Summary Table

Site: FNTC - Bainbridge - Building 693 Confirmation Results
Lab: Mitkem Corporation
Reviewer: Michael J. Lacy, Ph.D.
Date: 06 October 1999
Report Number: E1066

Sample I.D.	B693-507DL		B693-508		B693-509		B693-511DL		B693-522DL	
Matrix	Concrete		Concrete		Concrete		Concrete		Concrete	
Units	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Date Sampled	6/23/98		6/23/98		6/23/98		6/23/98		6/23/98	
Time Sampled	1329		1336		1343		1403		1447	
% Moisture	5		4		7		5		6	
pH	N/A		N/A		N/A		N/A		N/A	
Dilution Factor	5.0		1.0		1.0		10.0		10.0	
	Result	VQ	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1221	<70	U	<70	U	<72	U	<70	U	<71	U
Aroclor 1232	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1242	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1248	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1254	1600		1400		1300		2200		3400	
Aroclor 1260	<35	U	<34	U	<35	U	<35	U	<35	U

Sample I.D.	B693-529DL		B693-533DL		B693-534DL		B693-539DL	
Matrix	Concrete		Concrete		Concrete		Concrete	
Units	ug/kg		ug/kg		ug/kg		ug/kg	
Date Sampled	7/1/98		7/1/98		7/1/98		7/1/98	
Time Sampled	0937		1010		1010		1041	
% Moisture	5		6		8		5	
pH	N/A		N/A		N/A		N/A	
Dilution Factor	10.0		10.0		10.0		10.0	
	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<35	U	<35	U	<36	U	<35	U
Aroclor 1221	<70	U	<71	U	<73	U	<70	U
Aroclor 1232	<35	U	<35	U	<36	U	<35	U
Aroclor 1242	<35	U	<35	U	<36	U	<35	U
Aroclor 1248	<35	U	<35	U	<36	U	<35	U
Aroclor 1254	2000		4300		2400		2300	
Aroclor 1260	<35	U	<35	U	<36	U	<35	U

VQ - Validation Qualifier

ATTACHMENT C

Laboratory Reported Results

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0009

224

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

ab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8262P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8051

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/10/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	.94	J
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0012 | 225

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

Lab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8263P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8052

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/10/97

Injection Volume. 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.4	
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0015

226

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

ab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8264P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8053

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/10/97

Injection Volume. 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	6.2	
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0018

227

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

Lab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8265P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8054

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/11/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	2.3	
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET 0021

EPA SAMPLE NO.

228

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

Lab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8266P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8055

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/11/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	5.3	
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0030

230

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

Lab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8268P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8057

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/11/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W		Q
12674-11-2	Aroclor-1016		1.0	U
11104-28-2	Aroclor-1221		1.0	U
11141-16-5	Aroclor 1232		1.0	U
53469-21-9	Aroclor-1242		1.0	U
12672-29-6	Aroclor-1248		1.0	U
11097-69-1	Aroclor-1254		8.4	
11096-82-5	Aroclor-1260		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0033

231

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

Lab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR8269P

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8060

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/11/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W		Q
12674-11-2	Aroclor-1016		1.0	U
11104-28-2	Aroclor-1221		1.0	U
11141-16-5	Aroclor-1232		1.0	U
53469-21-9	Aroclor-1242		1.0	U
12672-29-6	Aroclor-1248		1.0	U
11097-69-1	Aroclor-1254		4.5	
11096-82-5	Aroclor-1260		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0036

232

Lab Name: OHM ANALYTICAL DIVISION Contract: NFESC

ab Code: _____ Case No.: 19568N SAS No.: _____ SDG No.: Q5P71370

Matrix: (soil/water) WIPE Lab Sample ID: JR82709

Sample wt/vol: 1.00 (g/mL) W Lab File ID: UF8061

% Moisture: _____ decanted: (Y/N) ___ Date Received: 12/10/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 12/10/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/11/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/W	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	.83	J
11096-82-5	Aroclor-1260	1.0	U

ATTACHMENT D

Laboratory Reported Tentatively Identified Compounds

(Not Applicable)

ATTACHMENT E

Support Documentation

OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

ANALYTICAL DIVISION

Laboratory Analysis

Report(s) #623434

Client: OHM Remediation Services Corp.
Eastern Region (Pittsbugh, PA)

VOLUME I of I

Attn: Larry Stearns

Project: 19568 - Bainbridge, Port Deposit, MD

Date Samples Received: December 10, 1997 **Date Order Received:** December 10, 1997

Certification No.: **Maryland MDDHMH 210**

Reviewed and Approved by: Joseph A. Hnatow *Date:* December 19, 1997
Joseph A. Hnatow, Laboratory Manager

[illegible] U.S. Route 224 East ▪ P.O. Box 551 ▪ Findlay, OH 45839-0551 ▪ 419-423-3526

PROJECT NARRATIVE

REPORT # 623434

LABORATORY: OHM Analytical Division

PROJECT: 19568

PROJECT LOCATION: Bainbridge, Port Deposit, Maryland

The sample temperature upon receipt by the laboratory was 2°C which is within the temperature acceptability range of 2 - 4°C.

The information listed on the "SDG No." line for Form's I, II, III and IV represents the laboratory's analytical batch number.

PCB SEMIVOLATILE ORGANICS BY GC (QC Batch Q5P71370)

Zero of 24 surrogate recoveries were outside QC limits.

Zero of 2 method spike recoveries and zero of 1 method spike RPD were outside the QC limits. Due to the wipe samples matrix spikes are not possible, therefore, a method spike and method spike duplicate were analyzed to provide appropriate precision and accuracy information.

All method blank criteria were met for this report.

Initial and continuing calibration criteria were met.

All holdtimes were met for this sample set.

O'[illegible]emediation Se[illegible]s Corp.

CHAIN-OF-CUSTODY RECORD

FAX COPY
Form 0019
Field Technical Services
Rev. 08/89

190385

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME	PROJECT LOCATION
BAINBRIDGE	PORT DEPOSIT MD

PROJ. NO	PROJECT CONTACT	PROJECT TELEPHONE NO
19568	DEBRA BURKET	410-378-3223

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
FRANK ZEPKA	LARRY STEARNS / CHAZ CRENSHAW

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) PCB	REMARKS
1	B693-224	12-7-97	0915		X	Wipe Sample from Column South	1-4oz	X	
2	B693-225	12-9-97	0820		X	Wipe Sample from Middle Column	1-4oz	X	
3	B693-226	12-9-97	0825		X	Wipe Sample from North Column	1-4oz	X	
4	B693-227	12-9-97	0830		X	Wipe Sample from #1 PAD	1-4oz	X	
5	B693-228	12-9-97	0835		X	Wipe Sample from #2 PAD	1-4oz	X	
6	B693-229	12-9-97	0840		X	Wipe Sample from #3 PAD	1-4oz	X	
7	B693-230	12-9-97	0845		X	Wipe Sample from #4 PAD	1-4oz	X	
8	B693-231	12-9-97	0850		X	Wipe Sample from EAST Wall South of Door	1-4oz	X	
9	B693-232	12-9-97	0855		X	Wipe Sample from EAST Wall North of Door	1-4oz	X	
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-9	[signature]	FedEx	12/9/97	1630
2	1-9	FedEx	W. Stevens	12/10/97	11Am
3					
4					

REMARKS
- 24 hr. TAT
- Temperature Blank provided
- Please fax results to 410-378-3232

SAMPLER'S SIGNATURE [signature]

2000

OVERVIEW

Ten (10) samples were analyzed for polychlorinated biphenyls by EPA SW-846 Method 8082. Nine of these samples were concrete from the walls and floor of the lower mechanical room, and one was a wipe from a metal support column. No site-specific Quality Control samples were analyzed. Mitkem Corporation, located in Waverly, RI, performed these analyses.

SUMMARY

All samples were successfully analyzed.

MAJOR PROBLEMS

No major problems with the validity of the analytical data were found.

MINOR PROBLEMS

No minor problems with the validity of the analytical data were found.

NOTES

- Aroclor 1260 was recovered high in the matrix spike/matrix spike duplicate as a result of the concentration of Aroclor 1254 in the sample. Aroclor 1016 was acceptably recovered in the matrix spike/matrix spike duplicate. Aroclor 1016 and Aroclor 1260 were acceptably recovered in the Method Blank Spike. No data qualification is necessary.

REPORT CONTENT STATEMENT

These data were reviewed in accordance with USEPA Region III Modifications to National Functional Guidelines for Organic Data Review: Multi-Media, Multi-Concentration (OLMO1.0-OLMO1.9) for Pesticides/Polychlorinated Biphenyls. The text of this report only addresses items which affect the validity of the data contained therein.

ATTACHMENT A

Glossary of Data Qualifiers

Glossary of Data Qualifier Codes

Codes Relating to Identification
(Confidence Concerning Presence or Absence of Compounds)

U = Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

(No Code) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm the presence or absence in future sampling efforts.

Codes Related to Quantitation
(Can be used for both positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

Other Codes

Q = No analytical result.

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

ATTACHMENT B

Data Summary Forms

Data Summary Table

Site: FNTC - Bainbridge - Building 693 Confirmation Results
Lab: Mitkem Corporation
Reviewer: Michael J. Lacy, Ph.D.
Date: 06 October 1999
Report Number: E1066

Sample I.D.	B693-507DL		B693-508		B693-509		B693-511DL		B693-522DL	
Matrix	Concrete		Concrete		Concrete		Concrete		Concrete	
Units	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Date Sampled	6/23/98		6/23/98		6/23/98		6/23/98		6/23/98	
Time Sampled	1329		1336		1343		1403		1447	
% Moisture	5		4		7		5		6	
pH	N/A		N/A		N/A		N/A		N/A	
Dilution Factor	5.0		1.0		1.0		10.0		10.0	
	Result	VQ	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1221	<70	U	<70	U	72	U	<70	U	71	U
Aroclor 1232	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1242	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1248	<35	U	<34	U	<35	U	<35	U	<35	U
Aroclor 1254	1600		1400		1300		2200		3400	
Aroclor 1260	<35	U	<34	U	<35	U	<35	U	<35	U

Sample I.D.	B693-529DL		B693-533DL		B693-534DL		B693-539DL	
Matrix	Concrete		Concrete		Concrete		Concrete	
Units	ug/kg		ug/kg		ug/kg		ug/kg	
Date Sampled	7/1/98		7/1/98		7/1/98		7/1/98	
Time Sampled	0937		1010		1010		1041	
% Moisture	5		6		8		5	
pH	N/A		N/A		N/A		N/A	
Dilution Factor	10.0		10.0		10.0		10.0	
	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<35	U	<35	U	<36	U	<35	U
Aroclor 1221	<70	U	<71	U	<73	U	<70	U
Aroclor 1232	<35	U	<35	U	<36	U	<35	U
Aroclor 1242	<35	U	<35	U	<36	U	<35	U
Aroclor 1248	<35	U	<35	U	<36	U	<35	U
Aroclor 1254	2000		4300		2400		2300	
Aroclor 1260	<35	U	<35	U	<36	U	<35	U

VQ - Validation Qualifier

ATTACHMENT C

Laboratory Reported Results

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-507DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-01DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4511F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	170	U
11104-28-2	Aroclor-1221	350	U
1114-16-5	Aroclor-1232	170	U
53469-21-9	Aroclor-1242	170	U
12672-29-6	Aroclor-1248	170	U
11097-69-1	Aroclor-1254	1600	D
11096-82-5	Aroclor-1260	170	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-507

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4495F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674 11 2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	70	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	1700	
11096-82-5	Aroclor-1260	35	U

002A

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-508

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4496F

% Moisture: 4 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
1114-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	1400	
11096-82-5	Aroclor-1260	34	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-509

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4497F

% Moisture: 7 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	1300	
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-511DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-04DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4512F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	700	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	2200	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-511

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4498F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	70	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	2600	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-522DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-06DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4514F

% Moisture: 6 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	710	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	3400	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-522

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4500F

% Moisture: 6 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	4000	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-529DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-07DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4515F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	700	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	2000	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-529

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4501F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	70	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	2100	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-533DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-08DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4516F

% Moisture: 6 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	710	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	4300	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-533

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-08

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4502F

% Moisture: 6 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	5200	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-534DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-09DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4521F

% Moisture: 8 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	360	U
11104-28-2	Aroclor-1221	730	U
1114-16-5	Aroclor-1232	360	U
53469-21-9	Aroclor-1242	360	U
12672-29-6	Aroclor-1248	360	U
11097-69-1	Aroclor-1254	2400	D
11096-82-5	Aroclor-1260	360	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-534

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4507F

% Moisture: 8 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/06/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/07/98

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	73	U
1114-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	2500	E
11096-82-5	Aroclor-1260	36	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-539DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-10DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4522F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	700	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	2300	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-539

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) SOIL Lab Sample ID: E1066-10

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4510F

% Moisture: 5 decanted: (Y/N) N Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	70	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	2400	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-544DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) WIPE Lab Sample ID: E1066-11DL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E3A4523F

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/07/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/WIPE	Q
12674-11-2	Aroclor-1016	10	U
11104-28-2	Aroclor-1221	20	U
1114-16-5	Aroclor-1232	10	U
53469-21-9	Aroclor-1242	10	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	100	D
11096-82-5	Aroclor-1260	10	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-544

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix: (soil/water) WIPE Lab Sample ID: E1066-11

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E3A4488F

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/03/98

Extraction: (SepF/Cont/Sonc) SHAKER Date Extracted:07/06/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/06/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/WIPE	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
1114-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	100	E
11096-82-5	Aroclor-1260	1.0	U

ATTACHMENT D

Laboratory Reported Tentatively Identified Compounds

(Not Applicable)

ATTACHMENT E

Support Documentation

MITKEM CORPORATION

Client: OHM Remediation Services Corp.

Client Project: 19568, Bainbridge NTC

Lab Project: E1066

Date samples received: 7/3/98

Project Narrative

This data report includes the analysis results for ten (10) concrete samples and one (1) wipe that were received from OHM Remediation Services Corp. on July 3, 1998. Analyses were performed per specification in the Chain of Custody form. For reference, a copy of the Mitkem Sample Log-In form is included for cross-referencing the client sample ID and laboratory sample ID.

All of the analyses were performed according to method specifications. The matrix spike/matrix spike duplicate recovery for aroclor 1260 in sample B693-539 (Mitkem ID E1066-09 MS and MSD) is unusually high due to interference from the relatively high concentration of aroclor 1254 native to this sample. The aroclor 1016 recovery in this MS/MSD is within the acceptance window. A retention time shift occurred on the DB-608 column due to instrument maintenance. As the aroclor identifications are made from the daily calibration standard, the retention time shift has no effect on the results.

No other unusual occurrences were noted during sample analysis.

This data report has been reviewed and is authorized for release as evidenced by the signature below.

Edward A. Lawler
Laboratory Operations Manager

OHM Remediation Services Corp
Subsidiary of OHM Corporation
U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

214891

FORM 0019 REV. 2.97

OHM's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)

PROJECT NAME	PROJECT LOCATION	PROJECT NUMBER	LABORATORY PHONE	LABORATORY FAX	RECIPIENT NAME
Bainbridge NTC	Port Deposit, MD	19568	401-732-3400		Mitkem-Ed Lawler

PROJECT CONTACT	PROJECT PHONE NUMBER	PROJECT FAX	LABORATORY ADDRESS	ADDRESS
Mike Lacy	609-588-6339	609-588-6703	175 Metro Center Blvd	

PROJECT ADDRESS	CITY, STATE AND ZIPCODE	CLIENT	CITY, STATE AND ZIPCODE	CITY, STATE AND ZIPCODE
		US NAVY	Warwick, R.I. 02886	

PROJECT MANAGER	PROJECT MANAGER'S PHONE	PROJECT MANAGER'S FAX
Larry Stearns	412-963-2300	412-963-2327

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	T.A.T	Analyses: RCRA 8010	Comments
1	B693-507	concrete chip	6/23	1329	ICE	1x4oz		24hr	X	
2	B693-508		6/23	1330					X	
3	B693-509		6/23	1343					X	
4	B693-511		6/23	1403					X	
5	B693-517		6/23	1447					X	
6	B693-522		6/23	1523					X	
7	B693-529		7/1	0937		1x8oz			X	
8	B693-533		7/1	1003					X	
9	B693-534		7/1	1040					X	
10	B693-551		7/1	1041					X	

SAMPLES COLLECTED BY: [signature]

COURIER AND AIR BILL NUMBER: Fed Ex 8010205809 5

COOLER TEMPERATURE UPON RECEIPT: 4°C

RELINQUISHED BY	RECEIVED BY	DATE	TIME
[signature]	Fed Ex	7/2/98	1700
Kin Chu	[signature]	7/3/98	11:30

SAMPLE'S CONDITION UPON RECEIPT: Free of water

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

OHM Remediation Services Corp
Subsidiary of OHM Corporation
U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

214892

FORM 0019 REV. 2-97

OHM's LAB COORDINATOR	LAB COORDINATOR'S PHONE	LAB COORDINATOR'S FAX	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)

PROJECT NAME	PROJECT LOCATION	PROJECT NUMBER	LABORATORY PHONE	LABORATORY FAX	RECIPIENT NAME
Bainbridge	Port Deposit, MD	19568			Mitkem - Ed Lawler

PROJECT CONTACT	PROJECT PHONE NUMBER	PROJECT FAX	LABORATORY ADDRESS	ADDRESS
Mike Lacy	609-588-6339	609-588-6403		

PROJECT ADDRESS	CITY, STATE AND ZIPCODE	CLIENT	CITY, STATE AND ZIPCODE	CITY, STATE AND ZIPCODE
		U.S NAVY		

PROJECT MANAGER	PROJECT MANAGER'S PHONE	PROJECT MANAGER'S FAX
Larry Stearns	412-963-2345	412-963-2327

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T	Analyses: PCB 608	Comments
1	BG93-544	Wipe	7/1	1630	Hex.	1x4oz		24hr.	X	
2										
3										
4										
5										
6										
7										
8										
9										
10										

SAMPLES COLLECTED BY	COURIER AND AIR BILL NUMBER	COOLER TEMPERATURE UPON RECEIPT
	FedEx	

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
	FedEx	7/2/98	1700	

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

FORM 3
SOIL OTHER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1066

Matrix Spike - Sample No.: B693-534

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor 1016	360	0.00	360	100	70-130
Aroclor-1260	360	0.00	1400	389*	70-130

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	360	370	103	3	40	70-130
Aroclor-1260	360	1500	417*	7	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 2 out of 4 outside limits

COMMENTS: High concentration of Aroclor 1254 in B693-534 interferes with calculation of 1260 in MS/MSD.
SAC 7/9/98

OVERVIEW

Seven (7) concrete samples were analyzed by EPA SW-846 Method 8082 for polychlorinated biphenyls. These samples were collected from the walls and floor of the lower mechanical room. No site-specific Quality Control samples were analyzed. Mitkem Corporation, located in Waverly, RI, performed the analyses.

SUMMARY

All samples were successfully analyzed.

MAJOR PROBLEMS

No major problems with the validity of the analytical data were found.

MINOR PROBLEMS

No minor problems with the validity of the analytical data were found.

NOTES

- Aroclor 1260 was recovered high in the matrix spike/matrix spike duplicate as a result of the concentration of Aroclor 1254 in the sample. Aroclor 1016 was acceptably recovered in the matrix spike/matrix spike duplicate. Aroclor 1016 and Aroclor 1260 were acceptably recovered in the Method Blank Spike. No data qualification is necessary.

REPORT CONTENT STATEMENT

These data were reviewed in accordance with USEPA Region III Modifications to National Functional Guidelines for Organic Data Review: Multi-Media, Multi-Concentration (OLMO1.0-OLMO1.9) for Pesticides/Polychlorinated Biphenyls. The text of this report only addresses items which affect the validity of the data contained therein.

ATTACHMENT A

Glossary of Data Qualifiers

Glossary of Data Qualifier Codes

Codes Relating to Identification
(Confidence Concerning Presence or Absence of Compounds)

U = Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

(No Code) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm the presence or absence in future sampling efforts.

Codes Related to Quantitation
(Can be used for both positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

Other Codes

Q = No analytical result.

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

ATTACHMENT B

Data Summary Forms

Data Summary Table

Site: FNTC - Bainbridge - Building 693 Confirmation Results
Lab: Mitkem Corporation
Reviewer: Michael J. Lacy, Ph.D.
Date: 06 October 1999
Report Number: E1211

Sample I.D.	B693-546DL		B693-547DL		B693-548DL		B693-549DL		B693-554		B693-555DL		B693-557	
Matrix	Concrete		Concrete		Concrete		Concrete		Concrete		Concrete		Concrete	
Units	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Date Sampled	7/30/98		7/30/98		7/30/98		7/30/98		7/30/98		7/30/98		7/30/98	
Time Sampled	1300		1305		1310		1314		1340		1345		1355	
% Moisture	6		5		7		6		9		6		8	
pH	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
Dilution Factor	10.0		10.0		10.0		10.0		1.0		10.0		1.0	
[illegible]	Result	VQ	Result	VQ	Result	VQ	Result	VQ	Result	VQ	Result	VQ	Result	VQ
Aroclor 1016	<35	U	<35	U	<35	U	<35	U	<36	U	<35	U	<36	U
Aroclor 1221	<71	U	<70	U	<72	U	<71	U	<74	U	<71	U	<73	U
Aroclor 1232	<35	U	<35	U	<35	U	<35	U	<36	U	<35	U	<36	U
Aroclor 1242	<35	U	<35	U	<35	U	<35	U	<36	U	<35	U	<36	U
Aroclor 1248	<35	U	<35	U	<35	U	<35	U	<36	U	<35	U	<36	U
Aroclor 1254	3600		2400		2800		5200		1600		4700		440	
Aroclor 1260	<35	U	<35	U	<35	U	<35	U	<36	U	<35	U	<36	U

VQ - Validation Qualifier

ATTACHMENT C

Laboratory Reported Results

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-546DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-01DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4730F

% Moisture: 6 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	710	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	3600	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-546

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4713F

% Moisture: 6 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	3200	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-547DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-02DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4731F

% Moisture: 5 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	700	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	2400	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-547

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4714F

% Moisture: 5 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	70	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	1900	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-548DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-03DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4732F

% Moisture: 7 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	720	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	2800	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-548

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4717F

% Moisture: 7 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	2400	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-549DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-04DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4733F

% Moisture: 6 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	710	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	5200	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-549

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4718F

% Moisture: 6 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	4600	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-554

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4719F

% Moisture: 9 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	74	U
1114-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	1600	
11096-82-5	Aroclor-1260	36	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-555DL

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-06DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4734F

% Moisture: 6 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/04/98

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	710	U
1114-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	4700	D
11096-82-5	Aroclor-1260	350	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-555

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4720F

% Moisture: 6 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
1114-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	4400	E
11096-82-5	Aroclor-1260	35	U

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B693-557

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix: (soil/water) SOIL Lab Sample ID: E1211-07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E3A4721F

% Moisture: 8 decanted: (Y/N) N Date Received: 08/01/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:08/03/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/03/98

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	73	U
1114-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	440	
11096-82-5	Aroclor-1260	36	U

ATTACHMENT D

Laboratory Reported Tentatively Identified Compounds

(Not Applicable)

ATTACHMENT E

Support Documentation

MITKEM CORPORATION

Client: OHM Remediation Services Corp.

Client Project: 19568, Port Deposit MD

Lab Project: E1211

Date samples received: 8/1/98

Project Narrative

This data report includes the analysis results for one (1) debris sample and seven (7) concrete samples that were received from OHM Remediation Services Corp. on August 1, 1998. Analyses were performed per specification in the Chain of Custody form. For reference, a copy of the Mitkem Sample Log-In form is included for cross-referencing the client sample ID and laboratory sample ID.

All of the analyses were performed according to method specifications. Dilutions were necessary for six of the 8 samples due to concentrations of aroclors exceeding the upper calibration standard. The surrogate recoveries for sample B693-558DL (Mitkem ID E1211-08DL) were unusually high due to the dilution. A MS/MSD set was analyzed on sample B693-547 (Mitkem ID E1211-02). The MS/MSD recoveries for aroclor 1260 were unusually high due to interference from the aroclor 1254 in the unspiked sample. No other unusual occurrences were noted during sample analysis.

This data report has been reviewed and is authorized for release as evidenced by the signature below.

Edward A. Lawler
Laboratory Operations Manager

001

E121'

LAB COPY

Form 0019
Field Technical Services
Rev. 08/89

164357

O.H. Materials Remediation Services Corp.

CHAIN-OF-CUSTODY RECORD

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Bainbridge	PROJECT LOCATION: Port Deposit MD
PROJ. NO.: 19568	PROJECT CONTACT: Mike Lacy
PROJECT TELEPHONE NO.: 609 586 6339	
CLIENT'S REPRESENTATIVE: Frank Zepka	PROJECT MANAGER/SUPERVISOR: Larry Stearns

ITEM NO.	SAMPLE NUMBER	98 DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) PCBs 8040	REMARKS
1	B693-546	7/30	1300	X		Concrete chip	1	X	
2	B693-547		1305	X		concrete chip	1	X	
3	B693-548		1310	X			1	X	
4	B693-549		1314	X			1	X	
5	B693-554		1340	X			1	X	
6	B693-555		1345	X			1	X	
7	B693-557		1355	X			1	X	
8	B693-558		1515	X		Construction Debris metal wood plastic	1	X	
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	98 DATE	TIME
1	1-8	MJ Lacy	FedEx 800202436609	7/31	1630
2			[illegible]	8/1	9:30
3					
4					

REMARKS

Fax results to
Mike Lacy 609 586 6403
24 hr TAT
MJ Lacy 7484

SAMPLER'S SIGNATURE

Cooler Temp 20C MR 8/1

FORM 3
SOIL OTHER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORP. Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: E1211

Matrix Spike - Sample No.: B693-547

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1016	351	0.000	330	94	70-130
Aroclor-1260	351	0.000	1490	424*	70-130

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	351	331	94	0	40	70-130
Aroclor-1260	351	1690	481*	12	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 2 out of 4 outside limits

COMMENTS: _____

OVERVIEW

Three (3) soil samples were analyzed for polychlorinated biphenyls by EPA SW-846 Method 8082. These samples were collected from outside Building 691. No site-specific Quality Control samples were analyzed. QBioChem, located in Roanoke, VA, performed these analyses.

OHM only requested minimum deliverables, which includes sample results, blank results and surrogate recoveries. The lab provided continuing calibration results, blank results, laboratory control sample(lcs) and lcs duplicate results, and surrogate recoveries. No chromatograms were included in the data package.

A review of Region III Innovative Approaches to Data Validation indicated the following data was necessary to perform a Manual Level M1 Data Validation for Pesticides and PCBs:

1) Action Level notification (No PCBs are listed in the action levels)
2) Laboratory Blank results (Provided by lab)
3) Field Quality Control (No Field Quality Control samples were provided to lab)
4) Sample Paperwork (Provided by lab)
5) Chromatograms of all samples and standards (Not requested from the laboratory)

This Data Validation Report is as complete as possible with the level of data reported by the laboratory.

SUMMARY

All samples were successfully analyzed.

MAJOR PROBLEMS

No major problems with the validity of the analytical data were found.

MINOR PROBLEMS

No minor problems with the validity of the analytical data were found.

NOTES

- All quality control results/recoveries were acceptable and the data was found acceptable.

REPORT CONTENT STATEMENT

These data were reviewed in accordance with USEPA Region III Modifications to National Functional Guidelines for Organic Data Review: Multi-Media, Multi-Concentration (OLMO1.0-OLMO1.9) for Pesticides/Polychlorinated Biphenyls. The text of this report only addresses items which affect the validity of the data contained therein.

ATTACHMENT A

Glossary of Data Qualifiers

Glossary of Data Qualifier Codes

Codes Relating to Identification
(Confidence Concerning Presence or Absence of Compounds)

U = Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

(No Code) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm the presence or absence in future sampling efforts.

Codes Related to Quantitation
(Can be used for both positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

Other Codes

Q = No analytical result.

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

ATTACHMENT B

Data Summary Forms

Site: FNTC - Bainbridge - Building 691 Confirmation Results
Lab: Gascoyne
Reviewer: Michael J. Lacy, Ph.D.
Date: 16 November 1999
Report Number: 19568

Sample I.D.	B691-820		B691-822		B691-824	
Matrix	Soil		Soil		Soil	
Units	mg/kg		mg/kg		mg/kg	
Date Sampled	8/26/98		8/26/98		8/26/98	
Time Sampled	1245		1249		1253	
% Moisture	18.0		14.7		17.5	
pH	NA		NA		NA	
Dilution Factor	1.0		1.0		1.0	
[redacted]	Result	VQ	Result	VQ	Result	VQ
Total PCBs	< 1.2	U	< 1.2	U	< 1.2	U

ATTACHMENT C

Laboratory Reported Results

Q BioChem, L.L.C.
A USEPA Contract Laboratory
Analysis, Research & Technology Development

OHM Corporation
200 Horizon Center Blvd.
Trenton, NJ 08691
ATTN: Dr. Michael Lacy

Re: Laboratory Analysis
Q BioChem Client No. 10892
Port Deposit, MD

REPORT DATE/NUMBER: September 10, 1998 / 6

ANALYSIS FOR: PCBs, Ignitability, Corrosivity, Reactivity, TCLP Metals, TCLP Volatiles, TCLP Semi-Volatiles, TCLP Pesticides and Herbicides

METHOD OF ANALYSIS: SW-846 Methods 8082, 1010, 9045, 1311, 6010B, 7470A, 8260A, 8270A, 8081A, 8151A

SAMPLE ANALYSIS DATA

CLIENT ID: B691-820 **LAB ID: 233174**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1245
DESCRIPTION: BAMBRIDGE NTC/3 PT COMPOSITE

POLYCHLORINATED BIPHENYLS:
PCB ——— **< 1.2 mg/kg**
>Analysis Date: 08/28/98 Time: 2046 by: AMP Run ID: 082898A2
>Method: GC/ECD, SW-846 8082; Quantitation Limit=1.2 mg/kg
>Comments: Reported on a dry weight basis of 82.0% solids.

SURROGATE RECOVERY RESULTS:

Surrogate: DCB	% Recovery: 98.6	QAO: 50-150%
Surrogate: TCMX	% Recovery: 115.0	QAO: 50-150%

CLIENT ID: B691-822 **LAB ID: 233175**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1249
DESCRIPTION: BAMBRIDGE NTC/3 PT COMPOSITE
PCB ——— **< 1.2 mg/kg**
>Analysis Date: 08/28/98 Time: 2135 by: AMP Run ID: 082898A2
>Method: GC/ECD, SW-846 8082; Quantitation Limit=1.2 mg/kg

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

↳>Comments: Reported on a dry weight basis of 85.3% solids.

SURROGATE RECOVERY RESULTS:
Surrogate: DCB % Recovery: 96.4 QAO: 50-150%
Surrogate: TCMX % Recovery: 112.0 QAO: 50-150%

CLIENT ID: B691-824 **LAB ID: 233176**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1253
DESCRIPTION: BAMBRIDGE NTC/3 PT COMPOSITE

PCB ——— **< 1.2 mg/kg**
↳>Analysis Date: 08/28/98 Time: 2224 by: AMP Run ID: 082898A2
↳>Method: GC/ECD, SW-846 8082; Quantitation Limit=1.2 mg/kg
↳>Comments: Reported on a dry weight basis of 82.5% solids.

SURROGATE RECOVERY RESULTS:
Surrogate: DCB % Recovery: 97.5 QAO: 50-150%
Surrogate: TCMX % Recovery: 112.0 QAO: 50-150%

CLIENT ID: B691-DSP01 **LAB ID: 233177**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1618
DESCRIPTION: BAMBRIDGE NTC/5 PT COMPOSITE

PESTICIDE RESULTS:

Chlordane, TCLP ——— **< 0.015 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.015 mg/l
↳>Comments: The Regulatory Limit for Chlordane is 0.030 mg/l

Endrin, TCLP ——— **< 0.0100 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.0100 mg/l
↳>Comments: The Regulatory Limit for Endrin is 0.02 mg/l

Heptachlor epoxide, TCLP ——— **< 0.0050 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.0050 mg/l
↳>Comments: The Regulatory Limit for Heptachlor epoxide is 0.008 mg/l

Heptachlor, TCLP ——— **< 0.0050 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.0100 mg/l

REPORT CONTINUED ON NEXT PAGE

ATTACHMENT D

Laboratory Reported Tentatively Identified Compounds

(Not Applicable)

ATTACHMENT E

Support Documentation

OHM Corporation
200 Horizon Center Blvd.
Trenton, NJ 08691
ATTN: Dr. Michael Lacy

Re: Laboratory Analysis
Q BioChem Client No. 10892
Port Deposit, MD

REPORT DATE/NUMBER: September 10, 1998 / 6

ANALYSIS FOR: PCBs, Ignitability, Corrosivity, Reactivity, TCLP Metals, TCLP Volatiles, TCLP Semi-Volatiles, TCLP Pesticides and Herbicides

METHOD OF ANALYSIS: SW-846 Methods 8082, 1010, 9045, 1311, 6010B, 7470A, 8260A, 8270A, 8081A, 8151A

SAMPLE ANALYSIS DATA

CLIENT ID: B691-820 **LAB ID: 233174**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1245
DESCRIPTION: BAMBRIDGE NTC/3 PT COMPOSITE

POLYCHLORINATED BIPHENYLS:
PCB ——— **< 1.2 mg/kg**
↳>Analysis Date: 08/28/98 Time: 2046 by: AMP Run ID: 082898A2
↳>Method: GC/ECD, SW-846 8082; Quantitation Limit=1.2 mg/kg
↳>Comments: Reported on a dry weight basis of 82.0% solids.

SURROGATE RECOVERY RESULTS:
Surrogate: DCB % Recovery: 98.6 QAO: 50-150%
Surrogate: TCMX % Recovery: 115.0 QAO: 50-150%

CLIENT ID: B691-822 **LAB ID: 233175**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1249
DESCRIPTION: BAMBRIDGE NTC/3 PT COMPOSITE
PCB ——— **< 1.2 mg/kg**
↳>Analysis Date: 08/28/98 Time: 2135 by: AMP Run ID: 082898A2
↳>Method: GC/ECD, SW-846 8082; Quantitation Limit=1.2 mg/kg

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

↳>Comments: Reported on a dry weight basis of 85.3% solids.

SURROGATE RECOVERY RESULTS:

Surrogate: DCB	% Recovery: 96.4	QAO: 50-150%
Surrogate: TCMX	% Recovery: 112.0	QAO: 50-150%

CLIENT ID: B691-824 **LAB ID: 233176**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1253
DESCRIPTION: BAMBRIDGE NTC/3 PT COMPOSITE

PCB ——— < 1.2 mg/kg
↳>Analysis Date: 08/28/98 Time: 2224 by: AMP Run ID: 082898A2
↳>Method: GC/ECD, SW-846 8082; Quantitation Limit=1.2 mg/kg
↳>Comments: Reported on a dry weight basis of 82.5% solids.

SURROGATE RECOVERY RESULTS:

Surrogate: DCB	% Recovery: 97.5	QAO: 50-150%
Surrogate: TCMX	% Recovery: 112.0	QAO: 50-150%

CLIENT ID: B691-DSP01 **LAB ID: 233177**
MATRIX: Soil COLLECTED BY: CLIENT
COLLECTION DATE: 08/26/98 DATE RECEIVED: 08/28/98
OTHER ID: 19568 TIME COLLECTED: 1618
DESCRIPTION: BAMBRIDGE NTC/5 PT COMPOSITE

PESTICIDE RESULTS:

Chlordane, TCLP ——— < 0.015 mg/l
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.015 mg/l
↳>Comments: The Regulatory Limit for Chlordane is 0.030 mg/l

Endrin, TCLP ——— < 0.0100 mg/l
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.0100 mg/l
↳>Comments: The Regulatory Limit for Endrin is 0.02 mg/l

Heptachlor epoxide, TCLP ——— < 0.0050 mg/l
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.0050 mg/l
↳>Comments: The Regulatory Limit for Heptachlor epoxide is 0.008 mg/l

Heptachlor, TCLP ——— < 0.0050 mg/l
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.0100 mg/l

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

CLIENT ID: B691-DSP01 ▪ LAB ID: 233177 (continued)
↳>Comments: The Regulatory Limit for Heptachlor is 0.008 mg/l

Lindane, TCLP ——— **< 0.200 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.200 mg/l
↳>Comments: The Regulatory Limit for Lindane is 0.4 mg/l

Methoxychlor, TCLP ——— **< 1.0 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=1.0 mg/l
↳>Comments: The Regulatory Limit for Methoxychlor is 10.0 mg/l

Toxaphene, TCLP ——— **< 0.250 mg/l**
↳>Analysis Date: 09/03/98 Time: 14:26 by: WK Run ID: SPA233177
↳>Method: GC/ECD, SW-846 8081A; Quantitation Limit=0.250 mg/l
↳>Comments: The Regulatory Limit for Toxaphene is 0.50 mg/l

VOLATILE ORGANIC COMPOUNDS BY GC/MS:

1,1-Dichloroethene, TCLP ——— **< 0.025 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
↳>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

1,2-Dichloroethane, TCLP ——— **< 0.025 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
↳>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

1,4-Dichlorobenzene, TCLP ——— **< 0.025 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
↳>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

2-Butanone, TCLP ——— **< 0.050 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
↳>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.050 mg/l

Benzene, TCLP ——— **< 0.025 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
↳>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

Carbon Tetrachloride, TCLP ——— **< 0.025 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
↳>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

CLIENT ID: B691-DSP01 ▪ LAB ID: 233177 (continued)

Chlorobenzene, TCLP — **< 0.025 mg/l**
>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

Chloroform, TCLP — **< 0.025 mg/l**
>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

Tetrachloroethene, TCLP — **< 0.025 mg/l**
>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

Trichloroethene, TCLP — **< 0.025 mg/l**
>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

Vinyl Chloride, TCLP — **< 0.025 mg/l**
>Analysis Date: 09/02/98 Time: 14:57 by: RRW Run ID: VOA090298
>Method: GC/MS, SW-846 8260B; Quantitation Limit=0.025 mg/l

SURROGATE RECOVERY RESULTS:

Surrogate: 1,2-Dichloroethane-d4	% Recovery: 93.6	QAO: 70-121%
Surrogate: Bromofluorobenzene	% Recovery: 89.7	QAO: 74-121%
Surrogate: Dibromofluoromethane	% Recovery: 98.2	QAO: 80-120%
Surrogate: Toluene-d8	% Recovery: 97.4	QAO: 81-117%

METALS/ELEMENTS RESULTS:

Arsenic, TCLP — **< 0.005 mg/l**
>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
>Method: ICP, SW-846 6010B; Quantitation Limit=0.005 mg/l
>Comments: The Regulatory Level for Arsenic, TCLP is 5 mg/l

Barium, TCLP — **1.77 mg/l**
>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
>Method: ICP, SW-846 6010B; Quantitation Limit=0.001 mg/l
>Comments: The Regulatory Level for Barium, TCLP is 100 mg/l

Cadmium, TCLP — **0.002 mg/l**
>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
>Method: ICP, SW-846 6010B; Quantitation Limit=0.001 mg/l

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

CLIENT ID: B691-DSP01 ▪ LAB ID: 233177 (continued)

↳>Comments: The Regulatory Level for Cadmium, TCLP is 1 mg/l

Chromium, TCLP ——— **< 0.005 mg/l**
↳>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
↳>Method: ICP, SW-846 6010B; Quantitation Limit=0.005 mg/l
↳>Comments: The Regulatory Level for Chromium, TCLP is 5 mg/l

Lead, TCLP ——— **0.056 mg/l**
↳>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
↳>Method: ICP, SW-846 6010B; Quantitation Limit=0.005 mg/l
↳>Comments: The Regulatory Level for Lead, TCLP is 5 mg/l

Mercury, TCLP ——— **< 0.002 mg/l**
↳>Analysis Date: 09/02/98 Time: 14:43 by: LBH Run ID: 090298CV
↳>Method: CVAAS, SW-846 7470A; Quantitation Limit=0.002 mg/l
↳>Comments: The Regulatory Level for Mercury, TCLP is 0.2 mg/l

Selenium, TCLP ——— **0.005 mg/l**
↳>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
↳>Method: ICP, SW-846 6010B; Quantitation Limit=0.005 mg/l
↳>Comments: The Regulatory Level for Selenium, TCLP is 1 mg/l

Silver, TCLP ——— **< 0.002 mg/l**
↳>Analysis Date: 09/01/98 Time: 22:25 by: JW Run ID: 090198TR
↳>Method: ICP, SW-846 6010B; Quantitation Limit=0.002 mg/l
↳>Comments: The Regulatory Level for Silver, TCLP is 5 mg/l

SEMI-VOLATILE RESULTS BY GC/MS:

1,4-Dichlorobenzene, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for 1,4-Dichlorobenzene is 7.5 mg/l

2,4,5-Trichlorophenol, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for 2,4,5-Trichlorophenol is 400 mg/l

2,4,6-Trichlorophenol, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

CLIENT ID: B691-DSP01 ▪ LAB ID: 233177 (continued)
↳>Comments: The Regulatory Limit for 2,4,6-Trichlorophenol is 2.0 mg/l

2,4-Dinitrotoluene, TCLP ——— **< 0.10 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.10 mg/l
↳>Comments: The Regulatory Limit for 2,4-Dinitrotoluene is 0.13 mg/l

Cresols, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for Cresols is 200 mg/l

Hexachlorobenzene, TCLP ——— **< 0.10 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.10 mg/l
↳>Comments: The Regulatory Limit for Hexachlorobenzene is 0.13 mg/l

Hexachlorobutadiene, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for Hexachlorobutadiene is 0.5 mg/l

Hexachloroethane, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for Hexachloroethane is 3.0 mg/l

Nitrobenzene, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for Nitrobenzene is 2.0 mg/l

Pentachlorophenol, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for Pentachlorophenol is 100 mg/l

Pyridine, TCLP ——— **< 0.1 mg/l**
↳>Analysis Date: 09/04/98 Time: 16:12 by: MG Run ID: SPA233177
↳>Method: GC/MS, SW-846 8270; Quantitation Limit=0.1 mg/l
↳>Comments: The Regulatory Limit for Pyridine is 5.0 mg/l

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

CLIENT ID: B691-DSP01 ▪ LAB ID: 233177 (continued)

HERBICIDE RESULTS:

2,4-D, TCLP ——— **< 5.0 mg/l**
- Analysis Date: 09/04/98 Time: 10:34 by: WK Run ID: SPA233177
- Method: GC/ECD, SW-846 8151A; Quantitation Limit=5.0 mg/l
- Comments: The Regulatory Limit for 2,4-D is 10.0 mg/l

Silvex, TCLP ——— **< 0.50 mg/l**
- Analysis Date: 09/04/98 Time: 10:34 by: WK Run ID: SPA233177
- Method: GC/ECD, SW-846 8151A; Quantitation Limit=0.50 mg/l
- Comments: The Regulatory Limit for Silvex is 1.0 mg/l

POLYCHLORINATED BIPHENYLS:

PCB ——— **< 1.3 mg/kg**
- Analysis Date: 08/28/98 Time: 2312 by: AMP Run ID: 082898A2
- Method: GC/ECD, SW-846 8082; Quantitation Limit=1.3 mg/kg
- Comments: Reported on a dry weight basis of 77.5% solids.

SURROGATE RECOVERY RESULTS:

Surrogate: DCB	% Recovery: 98.9	QAO: 50-150%
Surrogate: TCMX	% Recovery: 115.0	QAO: 50-150%

ROUTINE LABORATORY RESULTS:

Corrosivity by pH ——— **6.04 pH units**
- Analysis Date: 08/31/98 Time: 14:00 by: LAF Run ID: CRR083198
- Method: Probe, SW-846 9045; Quantitation Limit=0.01 pH units
- Comments: Measured in DI water.

Ignitability ——— **> 202 Deg F**
- Analysis Date: 08/31/98 Time: 14:00 by: LAF Run ID: IGN083198
- Method: Closed Cup, SW 846 1010; Quantitation Limit=70 Deg F

Reactivity ——— **Neg.**
- Analysis Date: 08/31/98 Time: 14:00 by: LAF Run ID: REA083198
- Method: Presence/Absence, Spot Test; Quantitation Limit=Not Applicable
- Comments: Negative result for cyanide and sulfide presence.

REPORT CONTINUED ON NEXT PAGE

SAMPLE ANALYSIS DATA

Quality Assurance performed on the above data is presented on the following page(s).

If we may be of further assistance, please contact us at any time.

Sincerely,
Q BioChem, L.L.C.

Cheryl M. Daniel, Quality Assurance Manager

QUALITY ASSURANCE SUMMARY

CALIBRATION VERIFICATION

ANALYTE	UNITS	TYPE	TRUE	FOUND	% REC	QAO	RUN ID
Aroclor 1242	ug/ml	CCV11H	2.00	1.77	88.3	85-115%	082898A2
Aroclor 1232	ug/ml	CCV12G	2.00	2.03	101.4	85-115%	082898A2
Aroclor 1254	ug/ml	CCV12H	2.00	2.06	102.8	85-115%	082898A2
Aroclor 1016	ug Total	LCSM	42.5	44.0	103.5	75-125%	082898A2
Aroclor 1016	ug Total	LCSMD	47.3	49.7	105.1	75-125%	082898A2
Aroclor 1016	mg/kg	LCSS	25.1	25.4	101.2	75-125%	082898A2
1,1-Dichloroethene	ug/l	CCV21	50.0	49.0	98.0	75-125%	VOA090298
1,2-Dichloroethane	ug/l	CCV21	50.0	48.8	97.6	75-125%	VOA090298
1,4-Dichlorobenzene	ug/l	CCV21	50.0	48.0	96.0	75-125%	VOA090298
2-Butanone	ug/l	CCV21	50.0	56.4	112.8	50-150%	VOA090298
Benzene	ug/l	CCV21	50.0	51.4	102.8	75-125%	VOA090298
Carbon Tetrachloride	ug/l	CCV21	50.0	54.0	108.0	75-125%	VOA090298
Chlorobenzene	ug/l	CCV21	50.0	52.4	104.8	75-125%	VOA090298
Chloroform	ug/l	CCV21	50.0	48.7	97.4	75-125%	VOA090298
Tetrachloroethene	ug/l	CCV21	50.0	52.8	105.6	75-125%	VOA090298
Trichloroethene	ug/l	CCV21	50.0	47.7	95.4	75-125%	VOA090298
Vinyl Chloride	ug/l	CCV21	50.0	54.3	108.6	75-125%	VOA090298
1,1-Dichloroethene	mg/l	LCS21	0.050	0.050	100.0	61-145%	VOA090298
1,2-Dichloroethane	mg/l	LCS21	0.050	0.047	94.0	60-140%	VOA090298
1,4-Dichlorobenzene	mg/l	LCS21	0.050	0.042	84.0	75-125%	VOA090298
2-Butanone	mg/l	LCS21	0.050	0.048	96.0	50-150%	VOA090298
Benzene	mg/l	LCS21	0.050	0.050	100.0	76-127%	VOA090298
Carbon Tetrachloride	mg/l	LCS21	0.050	0.051	102.0	75-125%	VOA090298
Chlorobenzene	mg/l	LCS21	0.050	0.047	94.0	75-130%	VOA090298
Chloroform	mg/l	LCS21	0.050	0.048	96.0	75-125%	VOA090298
Tetrachloroethene	mg/l	LCS21	0.050	0.048	96.0	75-125%	VOA090298
Trichloroethene	mg/l	LCS21	0.050	0.045	90.0	71-120%	VOA090298
Vinyl Chloride	mg/l	LCS21	0.050	0.048	96.0	60-140%	VOA090298
Arsenic	ug/l	CCV1	500	525	104.9	90-110%	090198TR

QA Report Continued on Next Page

QUALITY ASSURANCE SUMMARY
Continued

CALIBRATION VERIFICATION

ANALYTE	UNITS	TYPE	TRUE	FOUND	% REC	QAO	RUN ID
Barium	ug/l	CCV1	500	521	104.3	90-110%	090198TR
Cadmium	ug/l	CCV1	500	527	105.3	90-110%	090198TR
Chromium	ug/l	CCV1	500	528	105.6	90-110%	090198TR
Lead	ug/l	CCV1	500	525	104.9	90-110%	090198TR
Selenium	ug/l	CCV1	500	527	105.4	90-110%	090198TR
Silver	ug/l	CCV1	250	261	104.4	90-110%	090198TR
Arsenic	ug/l	CCV2	500	484	96.8	90-110%	090198TR
Barium	ug/l	CCV2	500	478	95.6	90-110%	090198TR
Cadmium	ug/l	CCV2	500	483	96.6	90-110%	090198TR
Chromium	ug/l	CCV2	500	488	97.7	90-110%	090198TR
Lead	ug/l	CCV2	500	485	97.0	90-110%	090198TR
Selenium	ug/l	CCV2	500	491	98.1	90-110%	090198TR
Silver	ug/l	CCV2	250	239	95.7	90-110%	090198TR
Arsenic	ug/l	CCV3	500	496	99.1	90-110%	090198TR
Barium	ug/l	CCV3	500	479	95.8	90-110%	090198TR
Cadmium	ug/l	CCV3	500	494	98.9	90-110%	090198TR
Chromium	ug/l	CCV3	500	499	99.8	90-110%	090198TR
Lead	ug/l	CCV3	500	497	99.5	90-110%	090198TR
Selenium	ug/l	CCV3	500	498	99.6	90-110%	090198TR
Silver	ug/l	CCV3	250	242	97.0	90-110%	090198TR
Arsenic	ug/l	CCV4	500	505	100.9	90-110%	090198TR
Barium	ug/l	CCV4	500	488	97.6	90-110%	090198TR
Cadmium	ug/l	CCV4	500	500	100.0	90-110%	090198TR
Chromium	ug/l	CCV4	500	511	102.3	90-110%	090198TR
Lead	ug/l	CCV4	500	505	101.0	90-110%	090198TR
Selenium	ug/l	CCV4	500	510	102.1	90-110%	090198TR
Silver	ug/l	CCV4	250	248	99.0	90-110%	090198TR
Arsenic	ug/l	ICSABF	1000	957	95.7	80-120%	090198TR
Barium	ug/l	ICSABF	500	487	97.3	80-120%	090198TR
Cadmium	ug/l	ICSABF	1000	908	90.8	80-120%	090198TR
Chromium	ug/l	ICSABF	500	466	93.1	80-120%	090198TR

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QUALITY ASSURANCE SUMMARY
Continued

CALIBRATION VERIFICATION

ANALYTE	UNITS	TYPE	TRUE	FOUND	% REC	QAO	RUN ID
Lead	ug/l	ICSABF	1000	994	99.4	80-120%	090198TR
Selenium	ug/l	ICSABF	1000	971	97.1	80-120%	090198TR
Silver	ug/l	ICSABF	1000	1094	109.4	80-120%	090198TR
Arsenic	ug/l	ICSABI	1000	961	96.1	80-120%	090198TR
Barium	ug/l	ICSABI	500	498	99.7	80-120%	090198TR
Cadmium	ug/l	ICSABI	1000	918	91.8	80-120%	090198TR
Chromium	ug/l	ICSABI	500	466	93.3	80-120%	090198TR
Lead	ug/l	ICSABI	1000	997	99.7	80-120%	090198TR
Selenium	ug/l	ICSABI	1000	978	97.8	80-120%	090198TR
Silver	ug/l	ICSABI	1000	1100	110.0	80-120%	090198TR
Arsenic	ug/l	ICV1	1000	1002	100.2	90-110%	090198TR
Barium	ug/l	ICV1	500	497	99.5	90-110%	090198TR
Cadmium	ug/l	ICV1	500	505	100.9	90-110%	090198TR
Chromium	ug/l	ICV1	500	516	103.1	90-110%	090198TR
Lead	ug/l	ICV1	1000	1040	104.0	90-110%	090198TR
Selenium	ug/l	ICV1	2000	2065	103.3	90-110%	090198TR
Silver	ug/l	ICV1	500	507	101.3	90-110%	090198TR
Lead	mg/kg	LCSS	236	227	96.2	80-120%	090198TR
Arsenic	ug/l	LCSW	1000	950	95.0	80-120%	090198TR
Barium	ug/l	LCSW	500	471	94.3	80-120%	090198TR
Cadmium	ug/l	LCSW	500	469	93.8	80-120%	090198TR
Chromium	ug/l	LCSW	500	483	96.7	80-120%	090198TR
Lead	ug/l	LCSW	1000	972	97.2	80-120%	090198TR
Selenium	ug/l	LCSW	2000	1889	94.5	80-120%	090198TR
Silver	ug/l	LCSW	1000	1073	107.3	80-120%	090198TR
Mercury	ug/l	CCV1	5.00	5.10	102.0	80-120%	090298CV
Mercury	ug/l	CCV2	5.00	5.14	102.8	80-120%	090298CV
Mercury	ug/l	CCV3	5.00	4.04	80.8	80-120%	090298CV
Mercury	ug/l	CCV4	5.00	4.01	80.2	80-120%	090298CV
Mercury	ug/l	CCV5	5.00	4.15	83.0	80-120%	090298CV
Mercury	ug/l	ICV1	4.90	4.70	95.9	80-120%	090298CV

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QUALITY ASSURANCE SUMMARY
Continued

CALIBRATION VERIFICATION

ANALYTE	UNITS	TYPE	TRUE	FOUND	% REC	QAO	RUN ID
Mercury	ug/l	LCSW	4.90	4.86	99.2	80-120%	090298CV

BLANKS

ANALYTE	UNITS	TYPE	FOUND	QAO	RUN ID
PCB, Total	ug/ml	CCB11H	<0.013	<0.01 ug/ml	082898A2
PCB, Total	ug Total	PBM	<1.00	< 1 ug Total	082898A2
PCB, Total	mg/kg	PBO	<1.00	< 1 mg/kg	082898A2
PCB, Total	mg/l	PBW	<1.00	< 1 mg/l	082898A2
1,4-Dichlorobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
1,4-Dichlorobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
1,4-Dichlorobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4,5-Trichlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4,5-Trichlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4,5-Trichlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4,6-Trichlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4,6-Trichlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4,6-Trichlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4-D, TCLP	mg/l	BLK1	<5.00	<5.0 mg/l	SPA233177
2,4-D, TCLP	mg/l	BLK1	<5.00	<5.0 mg/l	SPA233177
2,4-D, TCLP	mg/l	BLK1	<5.00	<5.0 mg/l	SPA233177
2,4-Dinitrotoluene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4-Dinitrotoluene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
2,4-Dinitrotoluene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177

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QUALITY ASSURANCE SUMMARY
Continued

BLANKS

ANALYTE	UNITS	TYPE	FOUND	QAO	RUN ID
Chlordane, TCLP	mg/l	BLK1	<0.015	<0.015 mg/l	SPA233177
Chlordane, TCLP	mg/l	BLK1	<0.015	<0.015 mg/l	SPA233177
Chlordane, TCLP	mg/l	BLK1	<0.015	<0.015 mg/l	SPA233177
Cresols, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Cresols, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Cresols, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Endrin, TCLP	mg/l	BLK1	<0.010	<0.0100 mg/l	SPA233177
Endrin, TCLP	mg/l	BLK1	<0.010	<0.0100 mg/l	SPA233177
Endrin, TCLP	mg/l	BLK1	<0.010	<0.0100 mg/l	SPA233177
Heptachlor epoxide, TCLP	mg/l	BLK1	<0.005	<0.0050 mg/l	SPA233177
Heptachlor epoxide, TCLP	mg/l	BLK1	<0.005	<0.0050 mg/l	SPA233177
Heptachlor epoxide, TCLP	mg/l	BLK1	<0.005	<0.0050 mg/l	SPA233177
Heptachlor, TCLP	mg/l	BLK1	<0.005	<0.0050 mg/l	SPA233177
Heptachlor, TCLP	mg/l	BLK1	<0.005	<0.0050 mg/l	SPA233177
Heptachlor, TCLP	mg/l	BLK1	<0.005	<0.0050 mg/l	SPA233177
Hexachlorobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachlorobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachlorobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachlorobutadiene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachlorobutadiene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachlorobutadiene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachloroethane, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachloroethane, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Hexachloroethane, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Lindane, TCLP	mg/l	BLK1	<0.200	<0.200 mg/l	SPA233177
Lindane, TCLP	mg/l	BLK1	<0.200	<0.200 mg/l	SPA233177
Lindane, TCLP	mg/l	BLK1	<0.200	<0.200 mg/l	SPA233177
Methoxychlor, TCLP	mg/l	BLK1	<1.00	<1.0 mg/l	SPA233177

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QUALITY ASSURANCE SUMMARY
Continued

BLANKS

ANALYTE	UNITS	TYPE	FOUND	QAO	RUN ID
Methoxychlor, TCLP	mg/l	BLK1	<1.00	<1.0 mg/l	SPA233177
Methoxychlor, TCLP	mg/l	BLK1	<1.00	<1.0 mg/l	SPA233177
Nitrobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Nitrobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Nitrobenzene, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Pentachlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Pentachlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Pentachlorophenol, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Pyridine, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Pyridine, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Pyridine, TCLP	mg/l	BLK1	<0.100	<0.10 mg/l	SPA233177
Silvex, TCLP	mg/l	BLK1	<0.500	<0.50 mg/l	SPA233177
Silvex, TCLP	mg/l	BLK1	<0.500	<0.50 mg/l	SPA233177
Silvex, TCLP	mg/l	BLK1	<0.500	<0.50 mg/l	SPA233177
Toxaphene, TCLP	mg/l	BLK1	<0.250	<0.250 mg/l	SPA233177
Toxaphene, TCLP	mg/l	BLK1	<0.250	<0.250 mg/l	SPA233177
Toxaphene, TCLP	mg/l	BLK1	<0.250	<0.250 mg/l	SPA233177
1,1-Dichloroethene	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
1,2-Dichloroethane	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
1,4-Dichlorobenzene	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
2-Butanone	ug/l	CCB21	<10.0	<10.0 ug/l	V0A090298
Benzene	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
Carbon Tetrachloride	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
Chlorobenzene	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
Chloroform	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
Tetrachloroethene	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
Trichloroethene	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298
Vinyl Chloride	ug/l	CCB21	<5.00	<5.0 ug/l	V0A090298

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QUALITY ASSURANCE SUMMARY
Continued

BLANKS

ANALYTE	UNITS	TYPE	FOUND	QAO	RUN ID
1,1-Dichloroethene	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
1,2-Dichloroethane	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
1,4-Dichlorobenzene	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
2-Butanone	mg/l	PBWT21	<0.050	<0.050 mg/l	VOA090298
Benzene	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Carbon Tetrachloride	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Chlorobenzene	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Chloroform	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Tetrachloroethene	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Trichloroethene	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Vinyl Chloride	mg/l	PBWT21	<0.025	<0.025 mg/l	VOA090298
Arsenic	ug/l	CCB1	<5.00	<5.00 ug/l	090198TR
Barium	ug/l	CCB1	<1.00	<1.00 ug/l	090198TR
Cadmium	ug/l	CCB1	<1.00	<1.00 ug/l	090198TR
Chromium	ug/l	CCB1	<5.00	<5.00 ug/l	090198TR
Lead	ug/l	CCB1	<5.00	<5.00 ug/l	090198TR
Selenium	ug/l	CCB1	<5.00	<5.00 ug/l	090198TR
Silver	ug/l	CCB1	<2.00	<2.00 ug/l	090198TR
Arsenic	ug/l	CCB2	<5.00	<5.00 ug/l	090198TR
Barium	ug/l	CCB2	<1.00	<1.00 ug/l	090198TR
Cadmium	ug/l	CCB2	<1.00	<1.00 ug/l	090198TR
Chromium	ug/l	CCB2	<5.00	<5.00 ug/l	090198TR
Lead	ug/l	CCB2	<5.00	<5.00 ug/l	090198TR
Selenium	ug/l	CCB2	<5.00	<5.00 ug/l	090198TR
Silver	ug/l	CCB2	<2.00	<2.00 ug/l	090198TR
Arsenic	ug/l	CCB3	<5.00	<5.00 ug/l	090198TR
Barium	ug/l	CCB3	<1.00	<1.00 ug/l	090198TR
Cadmium	ug/l	CCB3	<1.00	<1.00 ug/l	090198TR

QA Report Continued on Next Page

QUALITY ASSURANCE SUMMARY
Continued

BLANKS

ANALYTE	UNITS	TYPE	FOUND	QAO	RUN ID
Chromium	ug/l	CCB3	<5.00	<5.00 ug/l	090198TR
Lead	ug/l	CCB3	<5.00	<5.00 ug/l	090198TR
Selenium	ug/l	CCB3	<5.00	<5.00 ug/l	090198TR
Silver	ug/l	CCB3	<2.00	<2.00 ug/l	090198TR
Arsenic	ug/l	CCB4	<5.00	<5.00 ug/l	090198TR
Barium	ug/l	CCB4	<1.00	<1.00 ug/l	090198TR
Cadmium	ug/l	CCB4	<1.00	<1.00 ug/l	090198TR
Chromium	ug/l	CCB4	<5.00	<5.00 ug/l	090198TR
Lead	ug/l	CCB4	<5.00	<5.00 ug/l	090198TR
Selenium	ug/l	CCB4	<5.00	<5.00 ug/l	090198TR
Silver	ug/l	CCB4	<2.00	<2.00 ug/l	090198TR
Arsenic	ug/l	ICB1	<5.00	<5.00 ug/l	090198TR
Barium	ug/l	ICB1	<1.00	<1.00 ug/l	090198TR
Cadmium	ug/l	ICB1	<1.00	<1.00 ug/l	090198TR
Chromium	ug/l	ICB1	<5.00	<5.00 ug/l	090198TR
Lead	ug/l	ICB1	<5.00	<5.00 ug/l	090198TR
Selenium	ug/l	ICB1	<5.00	<5.00 ug/l	090198TR
Silver	ug/l	ICB1	<2.00	<2.00 ug/l	090198TR
Lead	mg/kg	PBS	<0.500	<0.50 mg/kg	090198TR
Arsenic	ug/l	PBW	<5.00	<5 ug/l	090198TR
Barium	ug/l	PBW	<1.00	<1 ug/l	090198TR
Cadmium	ug/l	PBW	<1.00	<1 ug/l	090198TR
Chromium	ug/l	PBW	<5.00	<5 ug/l	090198TR
Lead	ug/l	PBW	<5.00	<5 ug/l	090198TR
Selenium	ug/l	PBW	<5.00	<5 ug/l	090198TR
Silver	ug/l	PBW	<2.00	<2 ug/l	090198TR
Mercury	ug/l	CCB1	<0.200	<0.2 ug/l	090298CV
Mercury	ug/l	CCB2	<0.200	<0.2 ug/l	090298CV

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QUALITY ASSURANCE SUMMARY
Continued

BLANKS

ANALYTE	UNITS	TYPE	FOUND	QAO	RUN ID
Mercury	ug/l	CCB3	<0.200	<0.2 ug/l	090298CV
Mercury	ug/l	CCB4	<0.200	<0.2 ug/l	090298CV
Mercury	ug/l	CCB5	<0.200	<0.2 ug/l	090298CV
Mercury	ug/l	ICB1	<0.200	<0.2 ug/l	090298CV
Mercury	ug/l	PBW	<0.200	<0.2 ug/l	090298CV

DUPLICATES

LAB ID	ANALYTE	SAMPLE	DUP	UNITS	RPD	QAO	RUN ID
LCSM	Aroclor 1016	103.5	105.1	% Rec	1.5	≤20 RPD	082898A2
233177	Arsenic	89.5	86.5	% Rec	3.4	≤20 RPD	090198TR
233111	Arsenic	<5.00	<5.00	ug/l	NC	≤20 RPD	090198TR
233177	Barium	91.8	85.5	% Rec	7.2	≤20 RPD	090198TR
233177	Cadmium	89.0	86.1	% Rec	3.4	≤20 RPD	090198TR
233111	Cadmium	<1.00	<1.00	ug/l	NC	≤20 RPD	090198TR
233177	Chromium	88.8	87.7	% Rec	1.3	≤20 RPD	090198TR
233111	Chromium	8.63	7.83	ug/l	9.7	≤20 RPD	090198TR
233177	Lead	90.5	87.3	% Rec	3.6	≤20 RPD	090198TR
233133	Lead	1.09	1.14	mg/kg	4.6	≤20 RPD	090198TR
233111	Lead	<5.00	5.95	ug/l	NC	≤20 RPD	090198TR
233177	Mercury	92.4	86.2	% Rec	6.9	≤20 RPD	090298CV
233177	Selenium	91.8	89.0	% Rec	3.0	≤20 RPD	090198TR
233177	Silver	91.4	88.7	% Rec	3.0	≤20 RPD	090198TR
233111	Silver	<2.00	<2.00	ug/l	NC	≤20 RPD	090198TR

QUALITY ASSURANCE SUMMARY
Continued

SPIKES

LAB ID	ANALYTE	TYPE	SAMPLE	SPK	ADDED	%REC	QAO	RUN ID
233111	Arsenic	MS	<5.00	451.1	500.0	90.2	75-125%	090198TR
233111	Cadmium	MS	<1.00	47.3	50.0	94.6	75-125%	090198TR
233111	Chromium	MS	8.63	192.9	200.0	92.1	75-125%	090198TR
233111	Lead	MS	<5.00	928.5	1000	92.9	75-125%	090198TR
233111	Silver	MS	<2.00	45.8	50.0	91.6	75-125%	090198TR
233133	Lead	MS	1.09	65.5	74.6	86.3	75-125%	090198TR
233177	Arsenic	MS	<5.00	447.3	500.0	89.5	75-125%	090198TR
233177	Barium	MS	1767	3603	2000	91.8	75-125%	090198TR
233177	Cadmium	MS	2.06	46.5	50.0	89.0	75-125%	090198TR
233177	Chromium	MS	<5.00	177.6	200.0	88.8	75-125%	090198TR
233177	Lead	MS	55.7	960.6	1000	90.5	75-125%	090198TR
233177	Selenium	MS	5.00	464.0	500.0	91.8	75-125%	090198TR
233177	Silver	MS	<2.00	45.7	50.0	91.4	75-125%	090198TR
233177	Arsenic	MSD	<5.00	432.6	500.0	86.5	75-125%	090198TR
233177	Barium	MSD	1767	3476	2000	85.5	75-125%	090198TR
233177	Cadmium	MSD	2.06	45.1	50.0	86.1	75-125%	090198TR
233177	Chromium	MSD	<5.00	175.4	200.0	87.7	75-125%	090198TR
233177	Lead	MSD	55.7	928.8	1000	87.3	75-125%	090198TR
233177	Selenium	MSD	5.00	450.2	500.0	89.0	75-125%	090198TR
233177	Silver	MSD	<2.00	44.4	50.0	88.7	75-125%	090198TR
233177	Mercury	MS	<2.00	9.24	10.0	92.4	75-125%	090298CV
233177	Mercury	MSD	<2.00	8.62	10.0	86.2	75-125%	090298CV

SURROGATES

LAB ID	ANALYTE	TRUE	FOUND	%REC	QAO	RUN ID

QA Report Continued on Next Page

QUALITY ASSURANCE SUMMARY
Continued

SURROGATES

LAB ID	ANALYTE	TRUE	FOUND	%REC	QAO	RUN ID
233174	DCB	0.100	0.099	98.6	50-150%	082898A2
233174	TCMX	0.100	0.115	115.0	50-150%	082898A2
233175	DCB	0.100	0.096	96.4	50-150%	082898A2
233175	TCMX	0.100	0.112	112.0	50-150%	082898A2
233176	DCB	0.100	0.098	97.5	50-150%	082898A2
233176	TCMX	0.100	0.112	112.0	50-150%	082898A2
233177	DCB	0.100	0.099	98.9	50-150%	082898A2
233177	TCMX	0.100	0.115	115.0	50-150%	082898A2
CCB11H	DCB	0.100	0.099	98.7	50-150%	082898A2
CCB11H	TCMX	0.100	0.095	94.7	50-150%	082898A2
CCB12G	DCB	0.100	0.101	101.0	50-150%	082898A2
CCB12G	TCMX	0.100	0.116	116.0	50-150%	082898A2
CCB12H	DCB	0.100	0.106	106.0	50-150%	082898A2
CCB12H	TCMX	0.100	0.100	100.0	50-150%	082898A2
CCV11H 1242 2.0	DCB	0.100	0.109	109.0	50-150%	082898A2
CCV11H 1242 2.0	TCMX	0.100	0.084	84.2	50-150%	082898A2
CCV12G 1232 2.0	DCB	0.100	0.121	121.0	50-150%	082898A2
CCV12G 1232 2.0	TCMX	0.100	0.094	93.6	50-150%	082898A2
CCV12H 1254 2.0	DCB	0.100	0.105	105.0	50-150%	082898A2
CCV12H 1254 2.0	TCMX	0.100	0.097	96.9	50-150%	082898A2
LCSM PCB 98-373	DCB	0.100	0.109	109.0	50-150%	082898A2
LCSM PCB 98-373	TCMX	0.100	0.093	93.1	50-150%	082898A2
LCSMD PCB 98-373	DCB	0.100	0.113	113.0	50-150%	082898A2
LCSMD PCB 98-373	TCMX	0.100	0.095	94.9	50-150%	082898A2
LCSS PCB 98-370	DCB	0.100	0.098	97.9	50-150%	082898A2
LCSS PCB 98-370	TCMX	0.100	0.092	92.2	50-150%	082898A2
PBM PCB 98-373	DCB	0.100	0.116	116.0	50-150%	082898A2
PBM PCB 98-373	TCMX	0.100	0.116	116.0	50-150%	082898A2
PBO PCB 98-371	DCB	0.100	0.086	85.5	50-150%	082898A2

QA Report Continued on Next Page

QUALITY ASSURANCE SUMMARY
Continued

SURROGATES

LAB ID	ANALYTE	TRUE	FOUND	%REC	QAO	RUN ID
PBO PCB 98-371	TCMX	0.100	0.081	81.4	50-150%	082898A2
PBW PCB 98-372	DCB	0.100	0.084	84.2	50-150%	082898A2
PBW PCB 98-372	TCMX	0.100	0.090	90.0	50-150%	082898A2
233177	2,4,6-Tribromophenol	0.000	0.000	86	10-123%	SPA233177
233177	2-Fluorobiphenyl	0.000	0.000	74	28-116%	SPA233177
233177	2-Fluorophenol	0.000	0.000	44	20-110%	SPA233177
233177	Dibutylchlorendate	0.000	0.000	50	22-135%	SPA233177
233177	Dichlorophenylacetic acid	0.000	0.000	18	11-135%	SPA233177
233177	Nitrobenzene-d5	0.000	0.000	70	35-115%	SPA233177
233177	Phenol-d5	0.000	0.000	34	10-110%	SPA233177
233177	TCMX	0.000	0.000	51	22-135%	SPA233177
233177	Terphenyl-d14	0.000	0.000	116	20-130%	SPA233177
233177	1,2-Dichloroethane-d4	50.0	46.8	93.6	70-121%	VOA090298
233177	Bromofluorobenzene	50.0	44.9	89.7	74-121%	VOA090298
233177	Dibromofluoromethane	50.0	49.1	98.2	80-120%	VOA090298
233177	Toluene-d8	50.0	48.7	97.4	81-117%	VOA090298
CCB21	1,2-Dichloroethane-d4	50.0	46.0	92.1	76-114%	VOA090298
CCB21	Bromofluorobenzene	50.0	45.4	90.8	86-115%	VOA090298
CCB21	Dibromofluoromethane	50.0	48.7	97.4	86-118%	VOA090298
CCB21	Toluene-d8	50.0	49.3	98.6	88-110%	VOA090298
CCV21	1,2-Dichloroethane-d4	50.0	48.7	97.5	76-114%	VOA090298
CCV21	Bromofluorobenzene	50.0	51.3	102.7	86-115%	VOA090298
CCV21	Dibromofluoromethane	50.0	48.2	96.4	86-118%	VOA090298
CCV21	Toluene-d8	50.0	53.5	106.9	88-110%	VOA090298
LCS21	1,2-Dichloroethane-d4	50.0	48.0	95.9	70-121%	VOA090298
LCS21	Bromofluorobenzene	50.0	44.8	89.5	74-121%	VOA090298
LCS21	Dibromofluoromethane	50.0	48.2	96.4	80-120%	VOA090298
LCS21	Toluene-d8	50.0	47.5	95.1	81-117%	VOA090298
PBWT21	1,2-Dichloroethane-d4	50.0	49.0	98.0	70-121%	VOA090298

QA Report Continued on Next Page

QUALITY ASSURANCE SUMMARY
Continued

SURROGATES

LAB ID	ANALYTE	TRUE	FOUND	%REC	QAO	RUN ID
PBWT21	Bromofluorobenzene	50.0	46.5	93.0	74-121%	VOA090298
PBWT21	Dibromcfluoromethane	50.0	50.4	100.8	80-120%	VOA090298
PBWT21	Toluene-d8	50.0	50.1	100.3	81-117%	VOA090298

QAO: Quality Assurance Objective; REC: Recovery; RPD: Relative Percent Difference; NC: Not calculatable.
DUP: Duplicate Analysis Result; SPK: Spiked Analysis Result; MS: Matrix SPK; MSD: Matrix SPK Duplicate.
For Duplicates <5X the Quantitation Limit (QL), ± DL shall apply for the QAO unless otherwise specified.

Remediation Services Corp.

CHAIN-OF-CUSTODY RECORD

10892

LAB COPY
Form 0019
Field Technical Services
Rev. 08/89

202995

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Bainbridge NTC	PROJECT LOCATION: Port Deposit MD		
PROJ. NO.: 19564	PROJECT CONTACT: Mike Lacy	PROJECT TELEPHONE NO.: 609 588 6339	
CLIENT'S REPRESENTATIVE: Frank Zepka	PROJECT MANAGER/SUPERVISOR: Larry Stearns		

ITEM NO.	SAMPLE NUMBER	96 DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) PCBs	TCLP Vol 8260	TCLP RCRA	REMARKS
1	B691-820	8/26	1215	X		3 pt composite	1	X			
2	B691-822	8/26	1249	X		3 pt composite	1	X			
3	B691-824	8/26	1253	X		3 pt composite	1	X			
4	B691-DS01	8/26	1618	X	X	5 pt composite	3	X	X	X	
5											
6											
7											
8											
9											
10											

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	96 DATE	TIME
1	1-4	MJ Lacy	FEDEX 807006181755	8/27	1500
2			Karl Moto	8/28	0945
3					
4					

REMARKS
PCBs on 24hr TAT fax results to Mike Lacy @ 609 588 6403
TCLP on 1WK TAT
MJ Lacy 956862
SAMPLER'S SIGNATURE

233174-177

APPENDIX D
APPLICABLE SECTIONS OF WORK PLAN

OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

WORK PLAN ADDENDUM
PCB REMOVAL ACTION
FORMER NAVAL TRAINING CENTER BAINBRIDGE
PORT DEPOSIT, MARYLAND

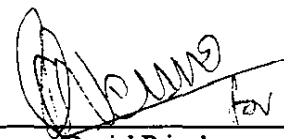
Prepared for:

DEPARTMENT OF THE NAVY
Atlantic Division
Contract No. N62470-93-D-3032/137
EFA Chesapeake - NAVFACENGCOM
901 M Street, S.E., Building 212
Washington, DC 20374-5018

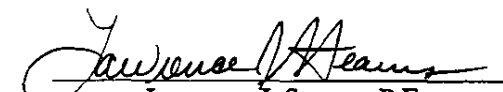
Prepared by:

OHM Remediation Services Corp.
Pittsburgh, Pennsylvania
A Subsidiary of OHM Corporation

Reviewed by:



Daniel Pringle
Senior Project Engineer



Lawrence J. Stearns, P.E.
Senior Project Manager

December 1, 1997
Delivery Order #137
OHM Project No. 19568

OHM Remediation
Services Corp.
A Subsidiary of OHM Corporation

December 1, 1997

Mr. Frank Zepka
EFA Chesapeake Division - NAVFACENGCOM
Building 212 - Code 1812
901 M Street SE
Washington, DC 20374-5018

RE: FINAL WORK PLAN ADDENDUM - PCB REMOVAL ACTION
NTC - BAINBRIDGE, MARYLAND
LANTDIV CONTRACT NO. N62470-93-D-3032/DO #137
OHM PROJECT NO. 19568

Dear Mr. Zepka:

Enclosed are four copies of the final Work Plan Addendum for the above-referenced project. This is for the scope of work in contract Modification #3 issued 29 September 1997. OHM has incorporated all revisions requested by the Navy, MDE, and USEPA. Two copies each have been forwarded to Mr. Kim Lemaster at MDE and Mr. Robert Lausch at USEPA.

If you have any questions or comments, please contact me at 800/284-6462 at your convenience.

Very truly yours,
OHM Remediation Services Corp.

by Lawrence J. Stearns, P.E.
Senior Project Manager

LJS:pjc
Enclosures

cc: K. Lemaster, MDE (2 copies)
R. Lausch, USEPA (2 copies)
J. Haste, LANTDIV (w/enclosures)
J. Franz, OHM (w/o enclosures)
D. Leadenham, OHM (w/enclosures)
Project File 19568

TABLE OF CONTENTS

1.0 INTRODUCTION

OHM Remediation Services Corp. (OHM) has been contracted by the Navy to perform a PCB removal action and additional site cleanup work at the former Naval Training Center at Bainbridge, Maryland (NTCB). This additional work is being performed under Contract No. N62470-93-D-3032, Delivery Order No. 137, as Modification No. 3 issued September 29, 1997.

The scope of this additional work is discussed in the subsequent sections of this document. Many of the work activities are similar to work previously conducted at NTCB by OHM under the original delivery order and several of the procedures developed for the original work will apply. These detailed procedures can be found in the OHM Work Plan (issued 18-Apr-97), Quality Control Plan, and Health and Safety Plan.

2.0 SCOPE OF WORK

The scope of work for this additional cleanup action was prepared by the Navy (EFACHES - NAVFACENGCOM) and is entitled "Chemical Cleanup at NTC-Bainbridge: PCB Removal Action" dated 2-Sep-97. In broad terms, the work involves the following items at Building 628 (Main Substation and Switch Yard), Building 693 (Water Treatment Plant), and other minor locations. The work areas are shown on Sheets SD-02 through SD-04. Other activities, such as mobilization, site setup, site restoration, and demobilization, are briefly discussed in Section 3.0.

The target analytes for this removal action includes polychlorinated biphenyls (PCBs), di-and trichlorobenzenes (DCB and TCB, respectively), polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (dioxins) and gasoline and diesel range total petroleum hydrocarbons (TPH).

2.1 INVESTIGATIVE SAMPLING AND ANALYTICAL WORK

Investigative samples will be collected to determine the presence and extent of impacted materials. These samples will be tested with both field and laboratory analytical techniques.

- Building 628 Switch Yard - presence and extent of PCB in detritus from within stone layer
- Building 628 Switch Yard - presence and extent of PCB on concrete transformer pads
- Building 628 Switch Yard - presence of dioxin in ash and soil at selected locations
- Building 628 Switch Yard - presence of TCB and DCB in detritus layer at selected locations
- Building 628 Bus Bank Room - presence of dioxin in ash material from Main Bus cabinet
- Building 693 Lower Mechanical Room and Pit - presence and extent of PCB in floor
- Building 693 Lower Mechanical Room and Pit - presence and extent of PCB in sediments
- Building 693 Lower Mechanical Room and Pit - presence and extent of PCB on vertical surfaces.

2.2 REMEDIATION OF IMPACTED MATERIALS

Impacted materials will be collected and removed for off-base disposal.

- Building 628 Switch Yard - PCB impacted soil, stone, and concrete
- Building 693 Lower Mechanical Room - PCB impacted concrete and sediments
- Building 117 - remove an underground storage tank (UST) and impacted soil (if present)
- Building 7 and 714 - drum removals
- Buildings 102 and 103 - removal of USTs (if any are found) and impacted soils (if present)

2.3 CONFIRMATION SAMPLING AND ANALYTICAL WORK

Confirmation samples will be collected to verify that the project action levels have been achieved. These samples will be tested with both field and laboratory analytical techniques.

- Building 628 Switch Yard - floors and sides of excavation areas

- Building 693 Lower Mechanical Room - concrete removal areas

2.4 GEOPHYSICAL INVESTIGATION

A geophysical investigation will be performed to locate USTs if they are present.

- Buildings 102 and 103 - perimeter investigation for possible USTs

2.5 DISPOSAL OF IMPACTED MATERIALS

Impacted materials collected for disposal will be transported and disposed of at approved off-base facilities.

- Provide transportation and disposal of impacted materials.
- Perform analytics on impacted materials as necessary to obtain disposal facility acceptance.

2.6 ACTION LEVELS

The following action levels, or cleanup criteria, have been prepared by the Navy in conjunction with the USEPA - Region 3 and the Maryland Department of the Environment.

MATRIX/AREA	ACTION LEVEL/CLEANUP CRITERIA
• PCB impacted soil	less than or equal to 10 mg/kg (ppm)
• PCB impacted concrete	less than or equal to 10 mg/kg (ppm)
• PCB impacted surfaces	less than or equal to 10 $\mu g/100\ cm^2$
• PCB encapsulated areas	less than or equal to 50 mg/kg (ppm)
• Dioxin impacted material	(to be determined on case-by-case basis)
• Petroleum impacted soil	less than or equal to 100 mg/kg (ppm) as TPH

2.7 TARGET SCHEDULE

The target milestone dates for the work are given below. These dates may change as the field work progresses and the scope of remediation becomes better known.

• 01-Dec-97	Mobilize
• 02-Dec-97	Begin initial investigative sampling and analytical
• 04-Dec-97	Drum removal at Buildings 7 and 714
• 08-Dec-97	Begin remediation at Building 628
• 08-Dec-97	Complete initial investigative sampling and analytical
• 10-Dec-97	Begin geophysical investigation at Buildings 102/103
• 12-Dec-97	Complete geophysical investigation at Buildings 102/103
• 12-Dec-97	Complete remediation at Building 628
• 12-Dec-97	Begin remediation at Building 693
• 15-Dec-97	Begin restoration of Building 628

- 16-Dec-97 Remove UST at Building 116
- 16-Dec-97 Complete restoration of Building 628
- 18-Dec-97 Complete remediation of Building 693
- 18-Dec-97 Begin disposal of impacted materials
- 19-Dec-97 Complete disposal of impacted materials
- 19-Dec-97 Begin restoration of Building 693
- 22-Dec-97 Complete restoration of Building 693
- 22-Dec-97 Begin site tear-down
- 23-Dec-97 Complete site tear-down
- 23-Dec-97 Demobilize
- 29-Dec-97 Begin draft close-out report
- 26-Jan-98 Submit draft close-out report
- 24-Feb-98 Comments due on draft close-out report
- 10-Mar-98 Submit final, merged close-out report.

3.0 SITE WORK ACTIVITIES

The following sections discuss the specific work activities discussed in Section 2.0. Additional procedures are included in the original Work Plan for activities similar to those conducted previously.

3.1 MOBILIZATION AND SITE SETUP

OHM will mobilize personnel and equipment from the New Jersey and Pennsylvania facilities. The command center, consisting of a field trailer and an assortment of vehicles and equipment, will be established at the same location used during previous work activities. The setup of facilities and structures will follow the procedures discussed in the original Work Plan.

3.2 SAMPLING AND ANALYSIS

The original Field Sampling and Quality Assurance Plan (FSQAP) is modified with the following information prepared for the PCB Removal Action. The known contaminants of concern vary between different work areas and media, but include the following:

- PCBs (Aroclor 1254, but possibly 1260 also)
  - Building 628 - Switch Yard - detritus layer, native soil, concrete pads
  - Building 693 - Lower Mechanical Room and adjacent pit - concrete floor and walls, sump, traps, pads, sediments

- dioxin (as Total Toxic Equivalent of 2, 3, 7, 8-TCDD)
  - Building 628 - Switch Yard - surface ash, detritus layer, native soil
  - Building 628 - Bus Bank Room - interior ash and debris in Main Bus cabinet

- trichlorobenzene (1, 3, 5-TCB and 1, 2, 4-TCB)
  - Building 628 - Switch Yard - native soil along fence line and concrete pads
  - (These samples are co-located with PCB samples, but at a different depth)

- dichlorobenzene (1, 2-DCB, 1, 3-DCB and 1, 4-DCB)
  - Building 628 - Switch Yard - native soil along fence line and concrete pads
  - (These samples are co-located with PCB samples, but at a different depth)

Samples will be of three distinct types: investigative, confirmation or disposal.

Investigative samples will be used to determine the presence and extent of contaminants of concern either before or during remediation work. Confirmation samples will be used to determine if the remediation work has achieved the action levels provided in Section 2.6. Disposal samples will be used to arrange for waste disposal services.

Investigative and confirmation samples will consist of both field and laboratory analyses as follows:

- Investigative Samples

Dioxin	100 % Laboratory	0 % Field Tests
TCB and DCB	100 % Laboratory	0 % Field Tests
PCB	10 % Laboratory	100 % Field Tests

- Confirmation Samples

Dioxin	100 % Laboratory	0 % Field Tests
TCB and DCB	100 % Laboratory	0 % Field Tests
PCB	50 % Laboratory	50 % Field Tests

At least one of the concrete samples from the investigative samples at Building 628 will be sent to the laboratory for analysis. In addition to the above samples, other sampling and analytical activities may be required. This could include drum and adjacent soil sampling if the drums contain residual materials or have leaked, UST sampling if other tanks are found during the geophysical study, or petroleum hydrocarbon analysis of soil samples if the Building 117 UST indicates leakage upon removal. All investigative or confirmation samples for these activities will be performed in the laboratory. Disposal analyses will also be performed by the laboratory.

3.2.1 Investigative Sample Locations

This section is provided to guide the investigative sampling and analyses for the PCB Removal Action work. In general, the procedures of Section 8 ("Field Sampling and Quality Assurance Plan") of the original Work Plan dated April 18, 1997, will be followed but will include the modifications in this addendum. Refer to the attached shop drawing (Sheets SD-03 and 04) for sample location details and notes. The goal of the investigative sampling work is to define the boundaries for remediation.

Most of the investigative work at Building 628 - Switch Yard will be for PCB delineation in the Switch Yard. The dioxin, TCB and DCB analytical results at Building 628 will need Navy and regulatory evaluation to determine if any additional sampling or remediation will be required.

During the investigative sampling at the Building 628, initial samples will be grab samples collected at the approximate center of the grids shown on SD-03. There are also several specifically located PCB samples not associated with the grid system. DCB/TCB samples will be co-located for collection at specified PCB sample locations, but will be collected in the native soil at a depth of 6 to 12 inches. The dioxin samples will be collected at some locations which are also PCB sampling locations and at some locations which are independent of PCB samples. The collection and immunoassay testing of all initial investigative PCB samples shown on SD-03 will be completed before the collection of any follow-up PCB samples is begun to define the limits of contamination.

At Building 693 - Lower Mechanical Room and adjacent pit, all of the investigative work is for PCB delineation. This will entail the collection and analysis of samples collected from concrete floors and walls, metal column and conduit piping, and sediment from various areas inside the building and the pit outside Building 693. The initial investigative samples will be collected based in a grid system, accompanied by other samples from selected locations, as shown on SD-04. The collection and testing of

all initial investigative PCB samples shown on SD-04 will be completed before the collection of any follow-up PCB samples is begun to define the limits of contamination.

3.2.1.1 Building 628 and Switch Yard

Initial investigative samples will be collected in the Switching Yard adjacent to Building 628 (Area 7 - Camp Barney: Grid D-7) at the locations shown on Sheet SD-03 along with notes regarding each sample. These locations include the following:

- Six dioxin samples (ash, detritus) at pre-established locations including four from the Switch Yard (B628-100 to B628-103), one from outside the fence towards Quarters R (B628-104), and one from inside the Main Bus cabinet within Building 628 (B628-105).

- Five TCB/DCB samples (B628-106 to B628-110) at pre-established locations in the Switch Yard (native soil). These samples are co-located with PCB samples, but are collected in the native soil at 6 to 12 inches deep.

- Six PCB samples (detritus) from pre-established locations in the Switch Yard (B628-111 to B628-114, and B628-138) and from below the former transformer platform just north of Building 628 (B628-139).

- Seven concrete samples for PCB analysis including one from the small pad (B628-115), three from the large west pad (B628-116 to B628-118), and three from the large east pad (B628-119 to B628-121). All of these samples will be collected on the pad top between the rails after all surface soil and grit has been removed by sweeping.

- Sixteen PCB samples (detritus) from the approximated centers of the grids.

No pre-established PCB samples have been specified for initial investigative sampling of the native soil underlying the stone layer of the Switch Yard. Soil samples for PCB or dioxin will be collected in the upper 4 inches of soil in the event there is insufficient detritus available for testing at a sample location. Any soil or grit present on the concrete pads will be removed prior to collection of the samples and disposed of in the >50 ppm PCB waste stream. The need for such samples will be established after reviewing the initial investigative sample results.

In the event that one or more of the initial investigative PCB soil samples exceeds the action levels noted in Section 2.6 (i.e., it is a "hot spot"), the following *general* procedure will be used to "chase" the boundaries of contamination (see SD-05 for an example). Best professional judgment will be used in the implementation of this general procedure. All of the initial grid and specifically located samples shown on SD-03 will be completed before chasing any hot spots. A careful review of this test data may result in field adjustments to the following general procedure.

- From the hot spot, collect and analyze 4 more samples taken 5 feet away to the north, south, east, and west.

- If all 4 of these samples are below the action level (i.e., it is a "clean" sample), then define the remediation area as 2.5 feet (half the distance) between the hot spot and the 4 clean samples. The depth of remediation will be determined during excavation.

- If one or more of these 4 samples is also a hot spot, then additional samples will be collected 5 feet from the new hot spot. These samples will be located: (1) in a straight line from the two most recent grid hot spots, (2) at a 45° angle to the right or above the straight line and (3) at a 45° angle to the left or below the straight line. This sample locating system will be continued until samples are found that test below the action levels. The remediation area will be defined as half the distance between the outermost hot spot and these samples below the action levels. The depth of remediation will be determined during excavation.

Each of the 28 PCB samples (concrete, soil or detritus) will be analyzed in the field using an immunoassay test kit (EnSys or equivalent). Ten percent of these samples (3 samples - one soil, one concrete, and one detritus) will be split for laboratory analysis. The three laboratory samples will be selected from "critical" locations from the point of view of residual exposure risk (i.e., where an immunoassay test had previously resulted in a "less than 10 ppm PCB" result and no remediation or further action would be forthcoming).

3.2.1.2 Building 693 - Lower Mechanical Room

Initial investigative samples will be collected for PCB analyses from sediments and concrete located in the lower mechanical room of the water treatment plant [Building 693 (Area 7 - Camp Barney: Grid D-9)]. Refer to Sheet SD-04 for sample locations and related information. These samples include the following based on a grid system and several selected sample locations:

- Concrete floor samples at 23 locations (B693-200 to B693-222). These samples will be biased to visibly stained areas.

- Nine wipe samples including: three samples from steel columns (B693-223 to B693-225), four samples from pad mounted machinery (B693-226 to B693-229), and two samples from wall mounted conduits and piping (B693-230 and B693-231).

- Concrete wall samples at 36 locations (B693-232 to B693-267) taken approximately 6 to 12 inches from the floor.

- Four sediment samples (B693-268 to B693-271) including one from the interior building floor, one from the floor of the exterior pit, and two from the sump and trench located in exterior pit.

Each of the 72 PCB samples will be analyzed in the field using an immunoassay test kit (EnSys or equivalent). Ten percent of these samples (7) will also have sufficient sample material collected for laboratory analysis. The seven laboratory samples will be selected from "critical" locations from the point of view of residual exposure risk (i.e., where an immunoassay test had previously resulted in a "less than 10 ppm PCB" result and no remediation or further action would be forthcoming).

3.2.1.3 Building 117 - Underground Storage Tank

Liquid samples of the tank's contents will be collected and analyzed for characterization and necessary disposal parameters prior to removal. Samples will be collected and analyzed for each distinct

layer of liquid in the tank. Previous information indicated that the UST contains heating oil. The sampling procedures will follow the SOP for drum and tank sampling presented in the original Work Plan for this delivery order. The MDE has provided written approval of the UST removal plan dated 17-Nov-97 in a letter from Mr. Herbert Meade to Mr. Frank Zepka.

The MDE will be given approximately 30 calendar days written notice (via MDE's "Underground Storage System Closure Thirty [30] Day Written Notification" form) prior to the tank removal and 2 days verbal further notice immediately before the tank removal once the actual date has been finalized. Notice will be provided to Mr. Gunner Roe, Oil Control Program at Maryland Department of the Environment, 2500 Broening Highway, Baltimore, Maryland, 21224 (410-631-3442 voice, -3092 fax).

3.2.2 Confirmation Sample Locations

Confirmation samples will be collected to verify that the remediation has achieved the Section 2.6 action levels for this project. This will involve a different grid and sampling frequency criteria than for the investigative sampling work. Both immunoassay field tests and laboratory analytical will be involved with the confirmation testing.

No PCB sample will be sent for laboratory analysis until the field analysis for that sample has been performed and found to be below the site action level of 10 mg/kg. If a sample is found to contain greater than 10 mg/kg PCBs, the site supervisor will be notified so additional excavation/removal may be performed.

3.2.2.1 Building 628 and Switch Yard

At the small concrete pad, 4 wall samples and 4 floor samples of soil will be collected within the excavation. One sample will be collected per wall and one floor sample will be collected on each side of the pad. All samples will be screened in the field with the immunoassay test kits and half the samples will also be analyzed for PCBs in the laboratory.

At each of the larger concrete pads (east and west), 8 wall samples and 8 floor samples of soil will be collected within the excavation. Two samples will be collected per wall and two floor samples will be collected on each side of the pad. All samples will be screened in the field with the immunoassay test kits and half the samples will also be analyzed for PCBs in the laboratory. The confirmation samples that receive laboratory analysis will include at least one concrete sample if the concrete is remediated.

At other excavations with less than or equal to 400 square feet of floor area, 1 sample will be collected per 20 linear feet of wall and 1 floor sample will be collected per 100 square feet of floor. If the walls of the excavation total less than 40 linear feet, wall samples will be collected from opposite walls and the floor will be divided into quadrants. All samples will be screened in the field with the immunoassay test kits and half the samples will also be analyzed for PCBs in the laboratory.

At other excavations with greater than 400 square feet of floor area, 1 wall sample will be collected per 40 linear feet of wall and 1 floor sample will be collected per 400 square feet of floor. However, a minimum of 4 wall samples and 4 floor samples will be collected, the floor being divided into quadrants. All samples will be screened in the field with the immunoassay test kits and half the samples will also be analyzed for PCBs in the laboratory.

3.2.2.2 Building 693

Once the contaminated concrete has been removed, confirmation samples will be collected in the same manner as the investigatory samples were. Each of the areas to be sampled will be swept prior to sample collection to ensure no cross contamination occurs from the just removed concrete. Confirmation samples will be collected from the remediated areas on the following frequency:

- Wall and vertical surfaces — 1 sample per 50 square feet
- Floor and horizontal surfaces — 1 sample per 100 square feet.

Confirmation samples will be biased towards the "hottest" pre-remediation location for investigative samples.

3.2.2.3 Building 117 - Underground Storage Tank

Once the tank has been removed, verification soil samples will be obtained from the bottom and walls of the excavation according to the State of Maryland Department of the Environment procedures for tank removal. One soil sample will be obtained from the floor of the excavation and one soil sample from each of the four sidewalls. These 5 samples will be obtained using the excavator bucket if the excavation is such that personnel are not permitted to enter the excavation.

The samples will be analyzed for Total Petroleum Hydrocarbons (TPH) in both the gasoline and diesel range. If the analytical results are above the Section 2.6 action level of 100 ppm for TPH (both gasoline and diesel range), the excavation will continue and additional samples will be collected until the results are below the action level for TPH.

3.2.3 Sample Collection

The following sections discuss the procedures to be followed in obtaining the samples discussed previously. These procedures will be supplemented with the documentation and shipping procedures discussed in Section 8.0 of the original Work Plan.

3.2.3.1 Soil, Detritus, and Sediment Samples

Soil, detritus, and sediment samples will be collected using chemically-inert, disposable sample scoops, following OHM's Surface Soil Sample Collection SOP. Briefly, sediment samples will be collected from the top inch of sediment and placed in a 250 milliliter (mL) glass sample container, complete with a Teflon®-lined lid. The container will be gently tapped as it is filled, to minimize headspace.

Detritus must first be screened from the stone using a No. 4 or 8 sieve. The material passing the sieve will be collected on clean paper, sampled with a chemically-inert, disposable sample scoop, and placed in a 250 mL glass sample container complete with a Teflon®-lined lid. The container will be gently tapped as it is filled, to minimize headspace.

Soil samples will be collected from 0 to 4 inches below grade using chemically-inert, disposable scoops and placed in a 250 milliliter (mL) glass sample container, complete with a Teflon®-lined lid. For volatile samples (e.g., TCB and DCB), the samples will be placed in a 125 mL sample container. The containers will be gently tapped as filled, to minimize headspace.

3.2.3.2 Concrete Samples

Concrete samples will be collected using a ½-inch-diameter concrete bit to drill the concrete to a depth of ½ inch. Four drill holes will be needed to generate sufficient dust for each immunoassay analysis (approximately 4 cc or 10 grams). If a sample will be sent for off-site analysis, an additional 10 grams will be collected.

The drilling dust of wall samples (or vertical surfaces) will be collected on clean paper as shown on Shop Drawing SD-04. The drilling dust of floor samples (or horizontal surfaces) will be retained inside an aluminum or plastic bowl shroud, and dust will be collected by brushing the drill dust by hand on transfer (weighing) paper for placement in the sample jar. The sampler will change sample gloves and the drill bits will be decontaminated with solvents and detergent washes for PCB removal between samples.

3.2.3.3 Dioxin Samples

Samples for dioxin analysis will be placed in 250-milliliter amber glass jars. Soil samples will be obtained from the dioxin sample locations outside the building. These samples will be obtained between the depths of 3 and 9 inches below the ground surface and will be placed in separate 250 mL amber glass jars to protect the sample from the sunlight.

3.2.3.4 Quality Assurance/Quality Control Samples

Project-specific quality assurance/quality control (QA/QC) samples which will be collected for this sampling event include duplicate samples and matrix spike/spike duplicate (MS/SD) samples as follows:

- Soil duplicate sample containers will be filled alternately with the initial sample container. Soil MS/SD samples will be obtained from the initial sample container.

- Duplicate concrete samples will require an additional 10 grams of sample, as will concrete matrix spike and matrix spike duplicate samples (20 additional grams total). All concrete QA/QC samples will be co-located, as opposed to actual splits of sample materials.

3.2.3.5 Sample Numbering

Samples numbered 01 through 76 were previously collected for the Site Clean-Up Action portion of this project, and are described in Part 1 of the Contractor Close-Out Report for this project titled "Site Clean-Up and PCB Removal Actions" dated 10-Oct-97.

For the PCB Removal Action portion of this project, samples will be numbered following the format described below:

BXXX-NNN

- BXXX - building number closest to the work (e.g., 628, 693, 117, 007, 714, 102, 103, etc.)
- NNN - denotes the consecutive sample number for each area as follows:
    - 100 series - all Building 628 samples (i.e., 100 to 199)
    - 200 series - all Building 693 samples (i.e., 200 to 299)
    - 300 series - all other samples for this work (i.e., 300 and beyond).

3.2.4 Analytical Methods

The following sections discuss the analysis to be conducted by the laboratory and in the field. The QC protocols for analysis will follow those established in the original Work Plan. The following SW-846 analytical methods will be used:

• Method 8290	Laboratory	all dioxin samples
• Method 8260	Laboratory	all TCB and DCB samples
• Method 8081	Laboratory	PCB samples
• Method 4020	Field	PCB samples by immunoassay test kits
• Method 8020	Laboratory	all BTEX only samples
• Method 8015	Laboratory	all TPH samples (modified GRO, DRO/LRO)

3.2.4.1 Field Analysis

Samples will be analyzed for PCB on site using immunoassay test kits. The samples are extracted following the manufacturer's instructions provided with the test kits and are then compared with the two reference standards supplied by the manufacturer. The two reference standards provide a QC check on the sample preparation and must be within the control limits of ± 0.20 instrument response on the photometer.

The reference standard is placed in the left path and the sample is then placed in the right path of the photometer. If a response is zero or negative, the sample contains equal to or greater than the standard's concentration. If the response is positive, the sample concentration is less than the standard concentration. The two reference standards that will be used for the PCB Removal Action work will be:

- 10 ppm PCB
- 50 ppm PCB

These standards will allow determination of whether a sample contains less than 10 ppm PCB, or greater than or equal to 10 ppm PCB. This allows evaluation relative to the site action levels (Section 2.6). If the sample contains greater than or equal to 10 ppm PCB, then the sample will be also run against the 50 ppm PCB standard to evaluate disposal options.

3.2.4.2 Laboratory Analysis and Turn Around Time

All samples for PCB analysis will be prepared using SW-846 Method 3550, Ultrasonic Extraction, and will be analyzed by Method 8081. The sample extract will be cleaned, if necessary, using the method(s) determined most appropriate by the laboratory.

All laboratory PCB samples will be analyzed on a 24-hour turnaround time (TAT).

All dioxin samples will be analyzed on the quickest TAT available from the laboratory, but no longer than 7 business days.

All other laboratory samples (e.g., TCB, DCB, TPH, BTEX) will be on a 7 business day TAT.

The laboratory samples for TPH, PCB, and TCB/DCB analysis will be tested by:

OHM Analytical Division
16406 US Route 224 East
Findlay, OH 45840
(419) 424-4981
Contact: Joe Hnatow

The samples for dioxin analysis will be tested by:

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713
(919) 544-5729
Contact: Mary McDonald ext. 269

3.2.5 Data Deliverables

All off-site laboratory analyses for PCB, dioxin, TCB and DCB will require independent data validation at the M2 level (reference: "Innovative Approaches for Validation of Organics Data," USEPA Region 3, June 1995). Laboratory data packages will be sufficient to permit the planned M2 data validation, and M3 data validation if so required at a later date. On-site analyses will have sample numbers, sample weights, standard preparation QC results, and analytical results tabulated and included in the analytical report.

3.3 UNDERGROUND STORAGE TANK REMOVAL

The UST previously discovered near former Building 117 will be sampled, emptied, removed, and disposed of according to the State of Maryland Department of Environment procedures. The previous work at the site involved the removal of USTs, and this new work will follow those procedures already established. To summarize, the following will be conducted:

- Remove overburden soil to expose sampling and access ports
- Obtain samples of tank contents and document liquids layering if more than one discrete layer exists
- Remove and containerize contents of UST following the procedures in OHM's Standard Operation Procedure (SOP) for UST removal
- Remove UST from the ground and purge tank with non-explosive gas
- Clean inside of tank and shear into manageable pieces for off-site salvage or disposal
- Excavate visually contaminated soils from tank excavation and stockpile soil for off-site disposal (if contamination exists)

- Conduct verification sampling and analysis
- Backfill excavation when analytical results are below action levels.

The containerized contents of the UST will be removed off site once the analysis is complete and arrangements are made with a disposal or recycling facility, depending on the tank's contents.

3.4 DRUM REMOVAL

There are several drums located at or near Buildings 7 and 714. These drums are believed to be empty and will only require handling and off-site disposal (possibly included with the UST scrap metal). During the handling and removal activity, the drums will be inspected to determine if material is present within any of the drums. If so, a sample of the drum's contents will be collected and analyzed for wastestream characterization. This sampling procedure will follow OHM's established SOP for drum sampling and handling.

3.5 GEOPHYSICAL STUDY

A magnetics survey will be conducted around the perimeter of Buildings 102 and 103 to determine if the fuel tanks still exist. Several USTs have been discovered in other areas, which leads to the possibility that these USTs still exist.

The survey will be conducted using a Schonstedt 52C or 72CV gradiometer. This instrument was used in previous magnetic surveys in which a UST was discovered within the former Base. The perimeter of the buildings will be scanned with this instrument out to a distance of 20 to 30 feet beyond each building wall. Any subsurface magnetic disturbance will be marked with pin flags and further scanned to estimate size, depth, and orientation. Subsurface disturbances which display the characteristics of a UST will be marked and labeled, and a figure will be made showing the possible UST locations. This information will then be submitted to the Navy for their review and further direction.

3.6 PCB-CONTAMINATED MATERIAL REMOVAL

Two areas are known to require PCB removal as previously discussed—the Building 628 Switch Yard and the Lower Mechanical Room in Building 693. The removal activities for each area are discussed below.

3.6.1 Building 628 Switch Yard

The removal of PCB impacted material will be based on the area delineation's developed from the investigative analytical work. Depth delineation will be determined during the removal work. The removal of contaminated material will be accomplished using an excavator.

Concrete that exceeds the Section 2.6 action levels will be broken into manageable pieces and direct loaded with the excavator into the transportation vehicles or a rolloff box.

Soil removal will be accomplished by first removing and stockpiling the aggregate on site (if the Navy requires the aggregate to remain on site), then removing approximately 12 inches of soil within the

20-foot by 20-foot grid. This soil will also be direct loaded for off-site disposal. Once all designated material has been excavated, confirmation sampling and analysis will be conducted in each excavated area. If results are still above the action levels, additional excavation will be performed until the confirmation analytics satisfy the action levels.

Once the confirmation sample results are below the action levels, the excavation areas will be backfilled with soil from an on-site borrow source identified by the Navy. This soil will be spread with the excavator after direct tailgating. The excavator will then track over the spread material or tamp it with the knuckled bucket to provide a compactive effort suitable for the area. The area will be seeded and mulched.

3.6.2 Building 693

The removal of PCB impacted concrete from walls, floors, or other areas will be based on the delineation developed by the investigative sampling and analytical work.

Concrete removal from horizontal surfaces will be accomplished using jack hammers or concrete saws down to a depth of 2 to 3 inches in the areas to be remediated. The concrete chips will be shoveled into wheel barrows and hauled to a dumpster positioned in an accessible area outside the building. This removal will follow the procedures outlined in the original HASP and OHM's SOP for concrete demolition.

Once the concrete floor has been removed in the designated areas, confirmation samples will be collected and analyzed. At this point, a new action level of less than or equal to 50 ppm PCB will be used at the Navy's discretion which allows encapsulation of any remaining PCB material. Additional removal will be performed until the confirmation samples indicated the action levels have been achieved. OHM will repair the damaged floor areas using pumpable concrete to approximately the original floor grade.

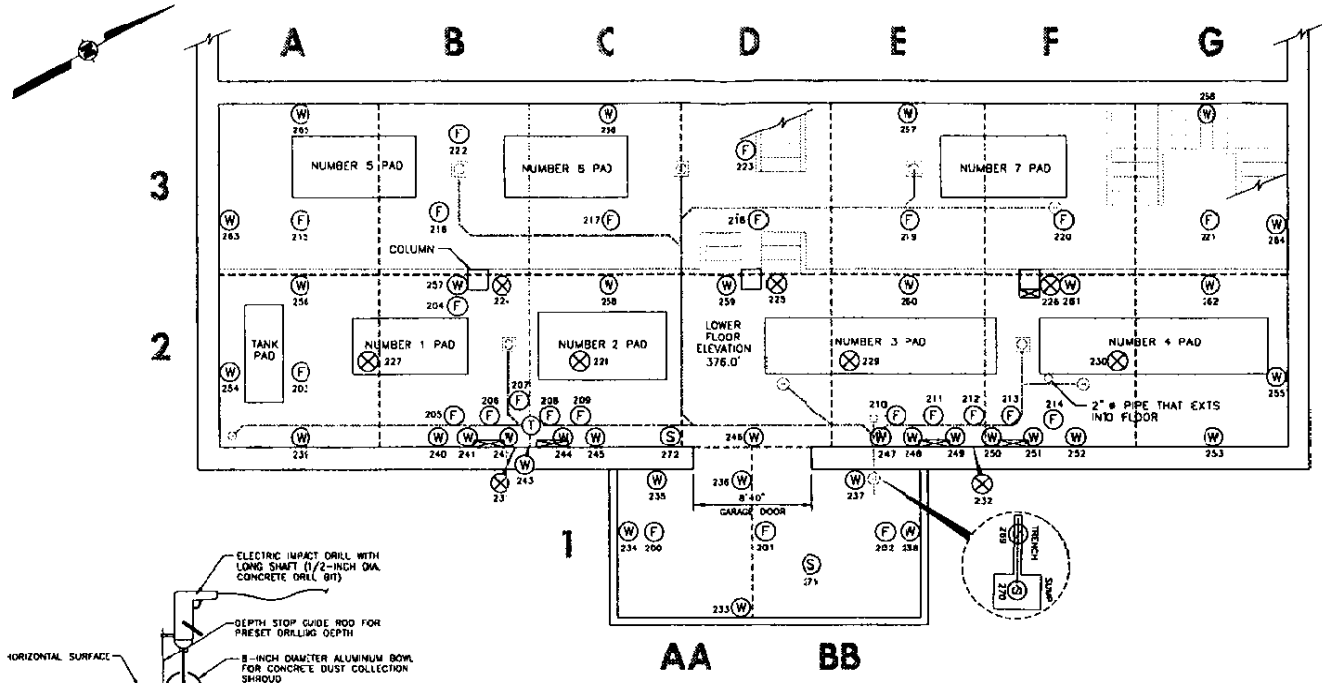
Concrete walls and vertical surfaces will be remediated by high pressure wash (3,000 psi) with detergent. If the contamination is deeper than the surface (1/8 th inch or more), a blasting abrasive grit will be added to the wash solution and the pressure increased to 5,000 psi or more to etch the surface. Heavily stained areas will be pre-soaked with a 30 to 50 % industrial detergent solution and pressure washed. Overspray will be controlled with polyethylene mist curtains and wash waters will be collected from polyethylene floor tarps.

Once the concrete wall or horizontal surface has been removed in the designated areas, confirmation samples will be collected and analyzed. Additional removal will be performed until the confirmation samples indicated the action levels have been achieved. OHM will repair the damaged wall areas using a hand troweled mortar patch mix to the approximate original surface.

Subfloor piping connecting floor drains and traps will be flushed with an aqueous detergent solution and grouted closed. Sediments in the flush solution will be collected in bag filters and the solution stored in a pool until disposal analytics are performed. The collected sediment will be tested for disposal purposes and periodically tested with immunoassay kits to observe the status of the flushing operation.

4.0 SITE HEALTH AND SAFETY

The field procedures discussed in this Work Plan Addendum will follow the safety procedures outlined in the original project Site-Specific Health and Safety Plan. There are, however, a few activities which are unique to this new work. These activities include concrete demolition and sampling for dioxin. Job safety analysis procedures have been included for these activities, as well as the UST removal, and are included in Appendix A. In addition, the Material Safety Data Sheet (MSDS) for dioxin has been included.

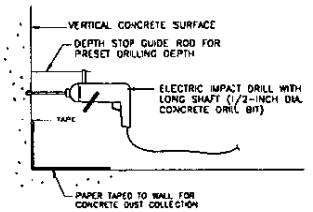


DETAIL 1
CONCRETE SAMPLE COLLECTION TECHNIQUE
FOR HORIZONTAL SURFACES
N.T.S.

BUILDING 693 - LOWER MECHANICAL ROOM
PCB SAMPLING LOCATIONS

SCALE

LOCATION	SAMPLE NO
FLOOR	200 TO 223
WIPE	224 TO 232
WALL	233 TO 268
SEDIMENT	269 TO 272



DETAIL 2
CONCRETE SAMPLE COLLECTION TECHNIQUE
FOR VERTICAL SURFACES
N.T.S.

LEGEND:

- (W) 265 — WALL SAMPLE (CONCRETE DRILL NEAR FLOOR)
- (F) 211 — FLOOR SAMPLE (FLOOR SAMPLE (CONCRETE DRILL)
- (⊗) 23 — WIPE SAMPLE (COLUMNS AND MACHINERY)
- (S) 27 — SEDIMENT SAMPLE

REVISIONS

DOCUMENT TRACKING

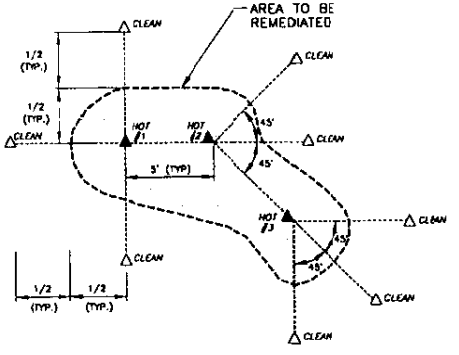
OHM Remediation Services Corp.

EFA - CHESAPEAKE

BUILDING 693 - PCB INVESTIGATIVE SAMPLING LOCATIONS

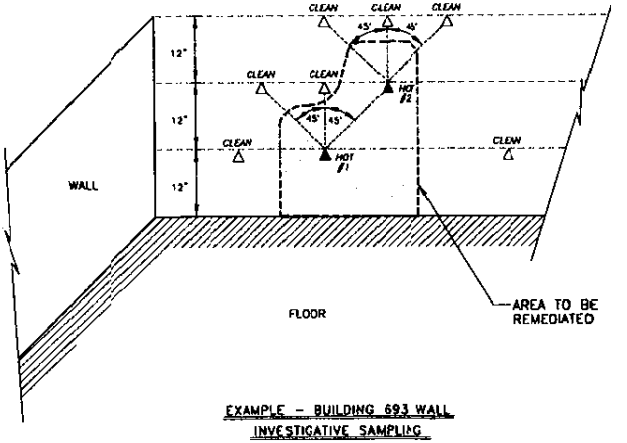
N62470-93-D-3037

SD-04



EXAMPLE – BUILDING 828 SWITCH YARD
INVESTIGATIVE SAMPLING

SCALE



EXAMPLE – BUILDING 693 WALL
INVESTIGATIVE SAMPLING

SCALE

OEM Remediation Services Corp.

EFA – CHESAPEAKE
SITE CLEAN-UP AND PCB REGIONAL ACTIONS
DELIVERY ORDER #137
EXAMPLE – CHASING INVESTIGATIVE SAMPLES

REVISIONS

DOCUMENT TRACKING

SD-05